

NOVEMBER 1949, 35 CENTS

# Modern PHOTOGRAPHY

combined with Minicam Photography

NEW  
EXPERIMENTAL  
SECTION...

12 ideas for unusual pictures

ON GOLDSHOLL

XUM



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these 2

*Exclusive  
Advantages*



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Here is a package strikingly different . . . a lens package never before offered. This new Animar lens package is a rigid, molded plastic container. The lens screws into a threaded base. Your lens is held rigid, no knocking around in the case. With a quarter turn the clear plastic top fastens securely over the lens. No dents on edge of sun shade . . . no flattening of screw threads . . . no scratching of lens surfaces. Animar lenses are completely protected, yet readily available, in this new long-lasting protective container.



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For many years, the world's leading cameramen of Hollywood have preferred Bausch & Lomb Baltar lenses . . . use them to film Hollywood's finest movies. All the experienced lens design and manufacturing know-how, accumulated by Bausch & Lomb in producing lenses for professional motion-picture cameramen, have gone into the development of the new Animar series of lenses. Now *your* movies can have crisp, sparkling, brilliant images with Bausch & Lomb Animar lenses . . . movies filmed in their full magnificence of fine detail, subtle tone and brilliant color. *Equip your camera now.*

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#### FREE FOLDER!

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# BAUSCH & LOMB



8mm and 16mm

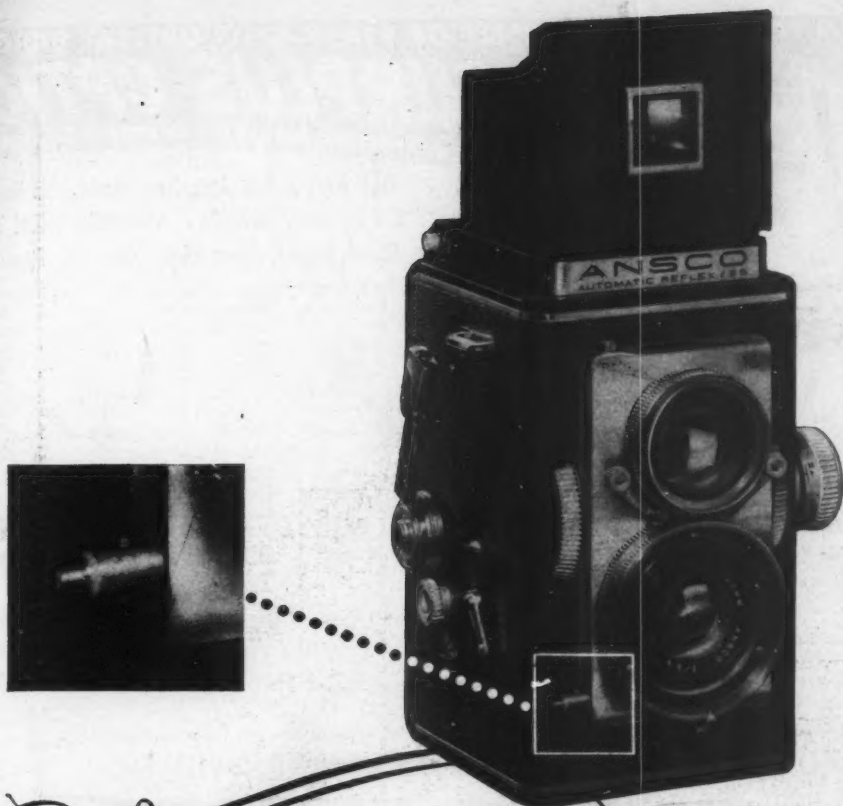
## ANIMAR LENSES

IF YOU'VE  
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It is the  
made in An  
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graphic resu

And now,  
more satisf  
shutter that  
accurately s  
from 1/400  
Precision





*Now.. to America's finest  
photographic instrument  
we add flash synchronization!*

**I**F YOU'VE ever held an Ansco Automatic Reflex Camera in your hands, you know that it is something more than just a camera.

It is the finest twin-lens reflex ever made in America—an instrument designed solely for those discriminating people who want the best in photographic equipment—the finest in photographic results.

And now, to make this camera even more satisfying, Ansco has added a shutter that is synchronized for flash—accurately synchronized for all speeds from 1/400 down.

Precision engineered all the way

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for yourself. See how smoothly, how easily the focusing knob brings your picture into critical focus. See how smart and good looking the Ansco Reflex Camera is. See it, hold it, buy it at your photographic dealer's today. **Ansco, Binghamton, N. Y.** A Division of General Aniline & Film Corporation. *"From Research to Reality."*

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***Ansco f3.5 automatic Reflex***

*America's finest twin-lens reflex camera*

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If you buy both Binocular Optics and Binocular Metal Parts, add 20% Federal Excise Tax to your remittance.

## Just the Ticket for Cutting Down Glare BUY THIS POLARIZING VARIABLE DENSITY ATTACHMENT for your Binoculars

An amazingly effective unit for controlling amount of light reaching your eyes. Cuts down glare in sky and over-water observations. Easily snapped on and off over the eye-cups of American-made 7x50 Binoculars. Gmt. cost \$8.30 each.  
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**COMPLETE OPTICS & METAL PARTS**—Model M13A1, 6x30 Binoculars (waterproof model). Everything you need, ready for assembly. When finished will look like a regular factory job costing \$102 to \$120. The Optics are new, in perfect or near-perfect condition. Have new low reflection coating. Metal Parts are new and perfect. All completely finished. Complete assembly instructions included.

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**METAL PARTS ONLY**—Model M-13A1, 6x30 Binoculars. No Optics. Same metal Parts as described for stock #830-M.

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Optics and Metal Parts are Available for Monoculars (1/2 a Binocular). Write for Bulletin M.

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SPOT LIGHTS, COPYING CAMERAS, CONDENSERS... Even Microscopes and Telescopes



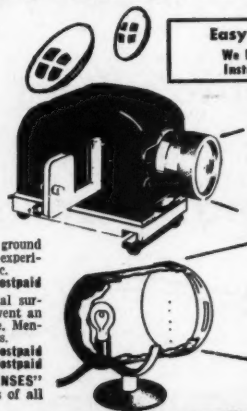
Look at These Special Offers

### SIMPLE LENS KITS

**10 LENSES... THE LENS CRAFTERS DELIGHT!** Fun for all! Kit includes plainly written, illustrated booklet showing how you can build lots of optical items. Use these lenses in photography for copying, **ULTRA CLOSE-UP SHOTS**, Micro-photography, for "Dummy Camera," Kodachrome Viewer, Detachable Reflex View Finder for 35mm. camera, Stereoscopic Viewer, ground glass and enlarging focusing aids. And for dozens of other uses in experimental optics, building **TELESCOPES**, low power **Microscopes**, etc.  
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**45 LENSES... 80 LENSES**—Some Gov't. surplus, some commercial surplus, some chipped rejects, some perfect, few coated... in any event an excellent bargain. Containing Plano Convex, Double Convex, Concave, Meniscus Lenses. Dia. range 5 mm to 40 mm. Assorted focal lengths.  
Stock #5-M—45 Lenses.....\$5.00 Postpaid  
Stock #10-M—80 Lenses.....\$10.00 Postpaid

**NEW 50-PAGE IDEA BOOK—"FUN WITH CHIPPED EDGE LENSES"**—Contains numerous projects and fully covers the fascinating uses of all Lenses in sets listed above, only \$1.00 Postpaid.



Easy as Rolling Off a Log!  
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Use for Projectors, Enlargers, Copying Cameras. Complete with Shutter and Diaphragm. Value about \$20. These were made for a specific camera, but had longer or shorter focal length than could be used, and then the camera was discontinued. An excellent buy. **WE WILL INCLUDE FREE ILLUSTRATED BOOKLET on HOW TO MAKE YOUR OWN ENLARGER.**

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\$7.50 Postpaid

Stock #8006-M—Speed of 1/7.7, focal length approx. 100 mm. Suitable for pictures, etc up to 2 1/4"x3 1/4".  
\$8.50 Postpaid

Stock #8007-M—Speed of 1/6.3, focal length approx. 100 mm.  
\$9.50 Postpaid

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F.L. 91.44 mm. (Just right for 35mm. Projectors). Speed of F1.9 Outside dia. of mount at one end 60 mm. Length of mount 64 mm.  
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**SLIDE PROJECTOR SETS**—Consist of all unmounted lenses you need to make the following size projectors:

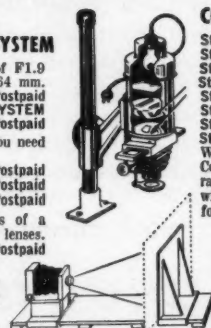
Stock #4038-M—2 1/4"x2 1/4".....\$3.35 Postpaid  
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Made to govt. spec. Free of abrasives. High wet strength.  
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Seconds but suitable for Enlargers and Spotlights.

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We have a Limited Quantity of Condensing Lenses—seconds—ranging from 1/4" to 6 1/2" in dia. with various focal lengths. Send for Free Bulletin—M.

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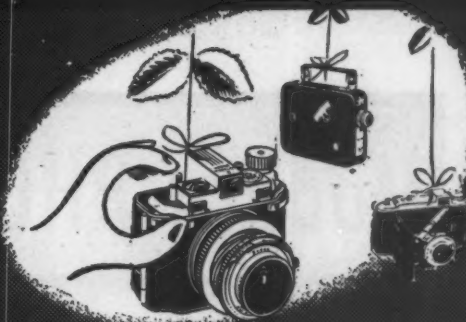
—2 Condensing Lenses with dia. of 2". Used for making 35 mm projectors, etc.  
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Anso Automatic Reflex, f 3.5 coated lens, case. Regularly \$275.00 **134.50**

Kodak Reflex 11, coated f 3.5 lens, fast shutter new Ek-

talite Viewfinder lens, case **124.50**

Automatic Rolleiflex, Carl Zeiss Tessar f 3.5 lens, coated. BRAND NEW but shelf worn **189.00**

Croflex "C", coated f 3.5 lens, Rapax Shutter, case. Regularly \$110.50 **69.50**

Rolleiflex, Standard Carl Zeiss Tessar f 3.5 lens, compur shutter, case **84.50**

Vogtlander Superb, Skopar f 3.5 lens, compur rim set shutter, film counter **79.50**

Argoflex EF, f 4.5 coated lens, synchronized shutter, case. Regularly \$74.75 **55.90**

Argoflex E, 4.5 coated lens. Regularly \$61.00 **49.50**

Croflex Model "E", f 3.5 coated lens, Rapax Synchro Shutter. If New \$113.69 **87.50**

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Leica Model A, f 3.5 lens **49.50**

Leica Model D, with Elmar f 3.5 lens **84.50**

Leica Model F, with Summar f 2 lens **139.50**

Leica Model G, with Summar f 2 lens **154.50**

Leica Model IIIC, with Elmar f 3.5 lens **159.50**

Leica Model IIIC, with Summar f 2 lens **199.50**

Leica Model IIIC, with Summarit f 2 lens **249.50**

Medalist I, with Elmar f 3.5 lens **119.50**

Contax II, with Sonnar f 2 lens **189.50**

Contax II, with Sonnar f 1.5 lens, factory coated **289.50**

Contax III, with Sonnar f 2 lens **225.00**

Contax III, with Sonnar f 1.5 lens, factory coated **319.50**

Contax III, with Sonnar f 1.5 lens **264.50**

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U 300 Baaja Unifile Box: holds 900 readymounts. Reg. \$10.30 **7.73**

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HF All-Metal Slide File Box: holds 75  $3\frac{1}{2} \times 4$  slides. Reg. \$4.00 **2.99**

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Kodaslide Model 2A, coated lens, 150 watts **35.75**

Argus Model PA 100, coated lens, 100 watts **20.99**

TDC Model B, 150 watts, coated lens, case **37.98**

TDC Model D, 300 watts, coated lens, case, blower **54.90**

Galde Manumatic, 300 watts, case, blower **44.50**

SVE Model AAA, 300 watts, roll or slide, case **59.70**

SVE Model "Entertainer", 300 watts, case **52.50**

Galde Master, 35mm to  $3\frac{1}{4} \times 4$ , 500 watts **49.98**

LaBelle Model PRC, Automatic coated lens, case **87.50**

Kodaslide Master Model, f 3.5 ctd lens, case **124.50**

Leitz Parvo, f 3.5 lens, case, rollholder **49.50**

Kodaslide Model A, f 3.5 lens, 150 watts **19.50**

Leitz Model VIIIS **59.50**

Spencer Model MK 300, case, blower **49.50**

Bell & Howell Duomaster, f 3.5 lens, case **67.50**

## GADGET BAG SPECIALS



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Large enough to hold a complete 4x5 Speed Graphic Outfit, Made of weatherproof,

waterproof, washable, TOLEX leather-cloth.

Size: 4" x 10½" x 5" **\$14.50**

No. 2608T Similarly constructed bag, only smaller. Size: 10" x 8½" x 2½" **\$11.95**

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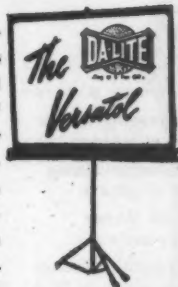
No. HF 74 same as above. Size: 9½" x 11" x 3". Reg. 21.00 **\$16.75**

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A convenient dependable, tripod screen in a one piece, self contained unit for projection of your fine movies or slides. Dalite glass beaded fabric screen surface stays clean and white—brings out the best in your movies and slides.



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Special **9.89**

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# Modern PHOTOGRAPHY

COMBINED WITH  
MINICAM PHOTOGRAPHY

contents, november, 1949

## articles

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HOME AND EDITORIAL OFFICES: TWENTY-TWO EAST TWELFTH ST., CINCINNATI 10, OHIO

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Same price cash or credit!

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- 2—Select that Brand New or Used Camera, or equipment, you desire in column three.
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Leica III f2 Summar CC.....		145.00	110.00
Leica III A f3.5 Elmar CC.....		139.00	105.00
Leica III A f2 Summar CC.....		167.00	135.00
Leica IIIb f2 Summar Cld CC.....		219.00	165.00
Leica IIIc f3.5 Elmar Cld CC.....		188.00	145.00
Leica IIIc f1.5 Summar Cld CC.....	280.00	159.00	125.00
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Leica IIIc f3.5 Cld Elmar.....	210.00		

Contaxes		Unetd.	Ctd.	T.I.V.
Contax I f2.8 Tessar CC.....		53.00	106.00	55.00
Contax I f2 Sonnar CC.....		106.00	129.00	70.00
Contax II f2 Sonnar CC.....		189.00	213.00	145.00
Contax II f1.5 Sonnar CC.....		235.00	265.00	185.00
Contax III f2 Sonnar CC.....		224.00	248.00	165.00
Contax III f1.5 Sonnar CC.....		265.00	295.00	200.00

Leica Contax Lenses and Accessories		New	Used	Trade In
Leica Manual 1949.....		4.50		
Leitz Polaroid Filter.....		22.00	15.00	
Focalside Copying Attachment.....		45.68	33.50	23.00
Leitz Vidom Finder.....		24.50	16.00	
Leitz Image Erecting Finder.....		77.00	39.00	30.00
Leitz Neoky Attachment.....		70.10	45.00	35.00
Leitz Leica Motor.....		59.00	35.00	25.00
Leitz VIII Synchronizer.....		63.00	49.00	25.00
Jen Caplor Flash Type 2.....		32.50	23.75	15.00
Jen Leica Flashgun.....		18.00		
Zeiss Universal Revolving.....		79.00	60.00	
Gen. Leica Eveready Case.....		12.30	6.95	
Speed-O-Copy for Leica or Contax.....		38.50	28.50	18.00
25mm f6.3 Hektor Lens for Leica.....		105.00	80.00	
35mm f3.5 Elmar W. A. Cld.....	123.20	84.00	60.00	
85mm Summar f1.9 Cld.....	472.00	74.00	55.00	
50mm f3.5 Elmar lens.....	155.40	35.00	25.00	
50mm f3.5 Cld Elmar.....		84.00	49.00	35.00
50mm f2 Summar lens.....		65.00	45.00	
50mm f2 Summar Cld.....	189.00	128.00	90.00	
5 Cm f1.5 T Cld Sonnar for Leica.....	175.00	129.00	90.00	
73mm f1.9 Hektor Tele Lens.....		124.00	90.00	
85mm Summar f1.9 Cld.....	472.00	345.00	225.00	
90mm f4 Elmar Tele Cld.....	155.40	105.00	85.00	
90mm f4 Elmar Tele Lens.....		79.00	69.00	
135mm Hektor f4.5 Tele.....		95.00	65.00	
135mm Hektor f4.5 Tele Cld.....	236.60	109.00	80.00	
28mm Zeiss Tessar f8 for Contax.....		89.00	65.00	
35mm Zeiss Biogen f2.8 W. A. 294.00		167.00	130.00	
85mm Zeiss Triotar f4 for Contax.....		98.00	65.00	
85mm Zeiss Sonnar f2 Contax.....		210.00	160.00	
135mm Zeiss Sonnar f4 for Contax.....		129.00	90.00	
50mm Sonnar f2 for Contax.....		55.00	40.00	
50mm Sonnar f1.5 for Contax.....		125.00	85.00	
50mm Sonnar T Cld f1.5 for Contax.....	165.00	135.00	95.00	

Minicams at Minifilm		Used	Trade In
Univex Mercury I f3.5 CC.....		17.00	10.00
Mercury II f2.7 Cld CC.....		72.50	31.00

If your camera isn't listed, write for free appraisal. If your selection isn't listed—write for quotation! Write for our FREE, New Bargain Bulletin—Full of additional selections and current trade-in allowance values!

Alfa Karat II RFDR f2.8 Xenar		Used	Trade In
Argus A-2 f4.5 CC.....	37.58	19.50	14.00
Argus 21 f3.5 Cld CC.....	60.25	43.00	32.00
Argus C-3 f3.5 Flash CC Cld.....	78.00	46.00	40.00
Perflex 101 Cpld f4.5 Cld.....	27.00		15.00
Perflex De Luxe Rfdr f2.8 Cld CC.....	79.00	49.00	35.00
Perflex 55 Rfdr f2.8 CC.....	34.50	20.00	15.00
Bolex 35mm cpld Rfdr f3.2 Cld.....	55.90	38.00	32.00
Bolsey B-2 f3.2 Cld Cpld.....	66.90	49.50	36.00
Synchro Retina I f3.5 lens.....	39.00	39.00	30.00
Retina Ia f3.5 Cld Xenar or Ektar.....	72.75	58.00	52.00
Retina Ila Rfdr f2 Cld Ektar or Xenon.....	197.63	139.00	100.00
Kine Exacta f3.5 Cld Tessar CC.....	135.00	114.00	85.00
Kine Exacta f2.8 Tessar CC.....	188.00	159.00	120.00
Kine Exacta f2 Blotar T Cld CC.....	244.00	195.00	150.00
Kodak 35 Rfdr f3.5 Cld.....	86.75	55.00	45.00
Kodak Bantam Special f2 Cpld.....	124.00	85.00	70.00
B & H Folen f2.2 Cld.....	700.00		
35mm Praktiflex f2.9 CC.....	56.00	42.00	30.00
Clarus Cpld f2.8 Cld.....	114.25	63.00	45.00
Kardon f2 Ektar Cld CC.....	299.50	186.50	145.00
Minox f3.5 Stereo Realist X f3.5 Cld Lenses.....	162.50	136.00	105.00
Ciro 35mm rfrd f4.5 Cld Well.....	49.50		
Ciro 35mm rfrd f3.5 Cld Well.....	59.50		

Roll Film Cameras		Used	Trade In
Universal Roamer II f4.5 Cld.....	48.00	34.00	25.00
120 Monte Carlo f3.5.....	63.75	39.00	25.00
120 Ikonta B f3.5 Tessar CC.....	105.00	72.00	50.00
120 Ikonta C f4.5 Novar.....	72.00	49.00	30.00
120 Super Ikonta A f3.5 Tessar CC.....	79.00	55.00	35.00
120 Super Ikonta A Special f3.5 Tessar CC.....	207.00	124.00	90.00
Super Ikonta B f2.8 Tessar CC.....	264.00	158.00	130.00
Super Ikonta BX f2.8 Tessar CC.....	330.00	192.00	160.00
Medalist I f3.5 Ektar Cld.....	119.00	85.00	60.00
Medalist II f3.5 Ektar Cld.....	297.50	175.00	145.00
620 Kodak Tourist f4.5 Cld Flash.....	71.00	55.00	40.00
120 Adox Folding f4.5.....	39.50		
120 Super Ikonta C f3.5 Tessar.....	243.00	168.00	100.00
Polaroid Land Camera.....	89.75	59.00	45.00

Mini Reflex		Used	Trade In
Argoflex f4.5 Cld CC.....	69.63	38.25	30.00
Argoflex EF f4.5 Cld CC.....	88.48		
Argoflex Em f4.5 Cld CC.....	72.90		
Ciroflex B f3.5 Cld Alphax CC.....	86.25	54.00	40.00
Ciroflex C f3.5 Cld Rapax CC.....	107.15	75.75	60.00
Ciroflex D f3.5 Cld Alphax.....	91.97	64.00	50.00
Synchro CC.....	91.97	64.00	50.00
Ciroflex E f3.5 Cld Rapax.....	122.20	89.00	76.00
Synchro CC.....	137.25	64.00	50.00
Ciroflex F f3.2 Cld.....	137.25	98.00	75.00
Ikoeflex I f3.5 Novar CC.....	111.00	59.00	45.00
Ikoeflex I f3.5 Cld Tessar CC.....	132.00		
Rolleicord I f4.5 Triotar CC.....	135.00	98.00	77.00
Rolleicord II f3.5 Cld Triotar CC.....	135.00	98.00	77.00
3 1/4x4 1/4 Super C Graflex Auto.....	189.00	144.00	110.00
Diaphragm Ektar f4.5 Cld.....	189.00	168.00	140.00
Auto Rolleiflex II f3.5.....	229.50	195.00	150.00
Auto Rolleiflex f3.5 Tessar CC.....	185.00	160.00	140.00
Kodak Reflex f3.5 Cld CC.....	95.00	74.00	55.00
Kodak Reflex II f3.5 Cld CC.....	154.91	109.00	85.00
Korelle Reflex I f2.9.....	64.00	40.00	

8mm and 16mm Cameras		Used	Trade In
8mm Revere 88 f2.5 Cld.....	74.50	45.50	35.00
8mm Revere 99 Turret f2.8 Cld.....	98.50	65.00	50.00
8mm Revere Magazine f2.5 Cld.....	87.50	54.50	40.00
8mm Revere Magazine f1.9 Cld.....	94.50		50.00
8mm Revere Magazine deluxe f2.5 Cld.....	122.50	85.00	65.00
8mm Revere Magazine Turret f2.5 Cld.....	147.50	109.00	80.00
8mm Revere Magazine Turret DeLuxo f2.8 Cld.....	104.50		55.00
8mm B & H Companion f2.5 Cld.....	99.75		50.00
8mm Cine Kodak 8-25 f2.7 Cld.....	71.00	44.00	35.00
8mm Kodak Reliant f2.7 Cld.....	89.00		40.00
8mm Bolex L-8 Vvar f2.8.....	119.50	69.00	50.00
8mm Kodak Magazine f1.9.....	163.33	114.75	80.00
8mm DeJur 100 f2.5 Cld.....	127.50	93.00	70.00
8mm DeJur 100 f1.9 Cld.....	148.50	105.00	80.00
8mm DeJur Embassy f2.5 Mag.....	99.50		55.00
16mm Keystone A-7 f2.5 Cld.....	74.50	48.00	35.00
16mm Revere Mag f2.5 Cld.....	130.00	95.00	70.00
16mm Revere Mag f1.9 Cld.....	150.00	115.00	85.00
16mm Revere Mag Turret f2.7 Cld.....	152.50	115.00	85.00
16mm Revere Mag Turret f1.9 Cld.....	179.50		
16mm Kodak Mag f1.9 Cld.....	175.00	117.00	85.00
16mm B&H Autoload Mag.....	185.00		90.00
16mm B&H 70DA Turret f1.9 Cld.....	307.17	255.00	165.00
16mm Bolex H-16 Turret f1.9 Cld.....	337.00	225.00	165.00

8mm and 16mm Projectors		Used	Trade In
8mm Revere P 85 Projector 500 W.....	99.50	64.00	50.00
8mm Ampro A-8 750 W.....	125.00	85.00	70.00
8mm DeJur 750 W.....	139.50	94.00	80.00
8mm DeJur 1000 W.....	159.50	112.00	85.00
8mm B&H Regent Projector 500 W.....	149.50		
8mm Keystone R-8 500 W.....	74.50	53.00	42.00
8mm Keystone K-108 750 W.....	129.50	85.00	70.00
16mm Revere 750 WCC.....	137.50	91.00	75.00
16mm Keystone A-87 750 W.....	99.50	61.50	45.00
16mm Keystone K-160 750 W.....	119.50	77.50	63.00
16mm B&H Diplomat 750 W.....	273.50	159.00	125.00
16mm Revere Sound Projector.....	287.50	197.00	160.00
16mm Datto Lightweight 750 W.....	289.00	189.00	160.00

Press Cameras		Used	Trade In
2 1/4 x 3 1/4 Busch f4.5 Well. Cld.....	161.25	108.00	80.00
2 1/4 x 3 1/4 Busch f4.5 Ektar Cld with Nu Vue Focus.....	217.10		120.00
2 1/4 x 3 1/4 Crown Graphic f4.5 Cld with Cld RF.....	194.00	155.00	115.00

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76m/m (3")	381m/m (15")	<b>\$19.00</b>
81m/m (3-1/16")	622m/m (24 1/2")	<b>\$22.50</b>
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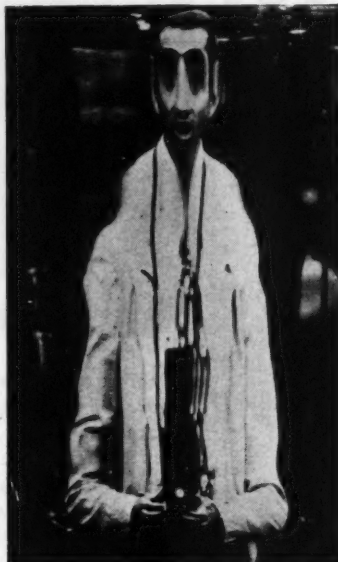
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## coffee break with the editors

### Necktie for Sale

One of *Modern's* editors paused in front of a wavy distortion mirror in the lobby of a West 42nd Street theatre in New York a few weeks ago. It was late at night and the editor, always on the lookout for interesting pictures, had photographed several pedestrians as



well as himself in the mirror before the girl in the ticket cage asked him what he was doing.

The editor explained that he was just snapshotting for fun. As he folded down the top of his reflex camera, preparing to leave, she asked him where he was from. He started to say, "From Cincinnati," but changed his mind. "From New York," he fibbed. "Why?"

The girl grimaced noncommittally. "No you ain't," she said in a south Brooklyn drawl. "You look like a hick."

The editor, slightly flustered, walked away. His companion who had stayed in the background during the episode, sauntered over to the ticket cage. "How come you tagged him for a hick?" he asked.

The girl shrugged impatiently. "He's wearing a necktie, ain't he? Nobody but hicks wear neckties in hot weather."

### Myopia

Now that photo dealers' shelves again bulge with new cameras, the 25% Fed-

eral Excise Tax placed on some cameras is graveling a lot of photographers. Reasoning that amateurs should pay excise tax, and that professionals should not, Washington's decision-makers set about figuring out a way to sock the first and by-pass the latter. Unfortunately, their idea of "ye professional picture-maker's camera" appears to have been based upon a woodcut of Brady's equipment. At any rate, the tax was made to apply only on camera boxes weighing less than four pounds. The result? Thousands of professionals who use single and twin-lens miniatures are being taxed along with the amateurs, while countless amateurs who buy press-type cameras weighing more than four pounds avoid the excise tax on the camera body the same as newspaper photographers. It's amusing. Until you go to buy a miniature yourself.

### Ants Yet

On page 37 of last month's lens testing article we accused photographer Mark Warren of fudging a little by popping a flashbulb on one comparison shot but not on the others. Now we take back everything we said after hearing Warren's explanation of what happened. It



seems that while he was making the box camera comparison shot of pretty Laverne Miller, an ant began to bother her. By the time he got to the reflex camera photo, the first ant had been joined by his relatives. When Warren focused his Speed Graphic, he saw that between the ants and the broiling sun, Miss Miller was utterly miserable.

Continued on page 128

# Beautiful COLOR PRINTS



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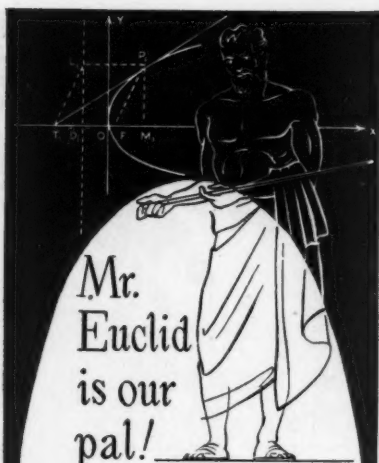
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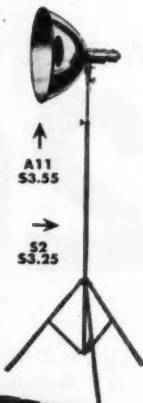
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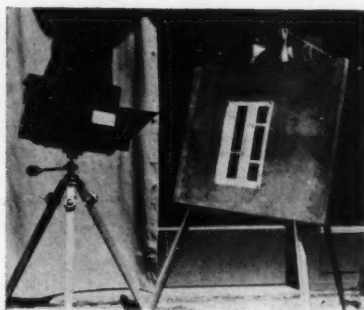
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## did you know? technician's notes

. . . that a war surplus tripod and a drawing board make an excellent improvised copying board for photographing maps, charts, photos, and the like. Two screw eyes and a stout cord were all that were required to fasten the board to the tripod as shown in the accompanying illustration. The cord was doubled for extra



strength. The nicest thing about this setup is its portability; it can be used outside as well as indoors. Since the legs of the tripod are movable, the "easel" can be slanted at any angle in order to make the copy material parallel with the film. Either scotch tape or push pins will do for securing the copy material in place.

. . . the speed of panning a movie camera, when not following action, should depend on the focal length of the lens being used? The longer the lens, the slower the panning should be. Try to gauge the speed while looking through the finder, imagining yourself as a spectator in a theater. Avoid panning with wide angle lenses if possible, especially of architectural subject matter. The distortion of the wide-angle lens, when emphasized by moving the camera during exposures, makes the crawling and twisting buildings, etc., take on an unnatural aspect. Pan shots should have a slow, gradual start and finish.

. . . that if you develop your own 35mm black and white film and are sometimes doubtful about the developing time, there is a clue in the film itself? All 35mm film has the manu-

facturer's name printed on its borders. This is printed in by exposure to standardized lighting. Therefore it can serve to indicate whether or not development has been complete. The lettering, when properly developed, is a rich black, with sharply defined edges. Underdevelopment produces gray letters, while overdevelopment is intensely black, and definition of the letters is fuzzy. Once you get a standard for yourself, preserve a piece of the negative for future references.

. . . that if you use a condenser type enlarger, you must exercise care in purchasing frosted globes? If the frosting is not perfect, that is, if it has scratches or other imperfections, they may show up in your finished prints.

. . . that there is a way to make a high-angle shot from four feet or so above your head without getting off the ground yourself? You may want to try this stunt the next time a crowd



blocks your view of a parade. You will need a delayed action gimmick on your shutter mechanism. Simply mount the camera on a light tripod, prefocused, set the delayed action release, and raise the tripod above your head. Simple as it is, this little trick is most effective.

MAURY KAINS

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our qual

Adox, 12 Xenon  
Agfa Karat, 14  
Argus A2, 14  
Argus 21, 13.5  
Argus C3, 13  
Belasy B, 13  
Belasy B2, 13  
Contax 1, 13  
Cinara, 12.8  
Foth Derby, 14  
Kardex, 12 E  
Kino Exakta,  
Kino 35mm,  
Kodak 35, 14  
Kodak 35 w/  
Kodak Flash  
Kodak 127,  
Laufer 127, 14  
Leica 111C,  
Mercury 1, 14  
Mercury 11,  
Perflex 55, 14  
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B&J 4x5  
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## amateur report

### *Art Center students spend a day at Kaminski Beach*

Just above Malibu in Southern California is a tiny stretch of sand reached by a rather tortuous path down the steep cliffs which has become known as "Kaminski Beach." It may have other names on the maps, but every photographer knows it as Kaminski Beach and has probably visited it at one time or another.

Eddie Kaminski, for whom it is named, is the instructor of creative photography at the Art Center School and it is almost impossible to graduate from the school without taking one of his fabulous trips to the beach.

Eddie is a little, rotund, middle-aged man with elevator eyebrows and a furious shock of uncontrollable hair. He is always on the move. He has just a little more stomach than he likes to admit and maintains it in spite of the fast pace which he sets. A typical day at the beach finds everyone completely fagged out and ready to quit, while Eddie is just getting started. He seldom completes a sentence in time to avoid some new idea or random thought which comes crowding in close on the heels of its predecessor.

The favorite anecdote of Duncan, head of the Photo Department, concerning Kaminski, describes the time Eddie got fed up with the amount of time the students were devoting to technique as opposed to visualization and instructed them to come to class with a live chicken under their arms. Fifty students with fifty chickens caused such an uproar that very little attention was given the mechanics of the camera for days to come.

Not all students relish the idea of driving sixty miles round trip to the beach, and maintain that they can "accumulate more sand per square camera on a Kaminski trip than by any other method." But they always come back for more. Those without imaginations soon tire under the constant strain towards originality and retire to the Pacific to lick their mental wounds.

Once on the beach with all their equipment, the students sit down with Eddie for a discussion of the aims and objectives of the day and are usually greeted with something like, "Don't think, just take lots of

CAMERAS, STUDENTS and models, all under the eye of instructor Eddie Kaminski (extreme right). They study the effects of lighting to produce uninhibited pictures of the girls on this rock near Malibu Beach. Said one onlooker, "The students' poses are more interesting than the models'."



pictures and we'll do the thinking in the dark room tomorrow."

Such statements by Eddie are not contrary to his avowed purpose of teaching his pupils to think; he is encouraging thought in its purest form. What he does not want to see is the studied, labored, stereotyped approach to the problems at hand. Rather than make pictures at the beach, he urges his students to make photographic records of what they see; the lichen on the rocks, the sand patterns, the flying spray and the tiny bits of marine, animal and vegetable life left on the beach by the last high tide.

It is interesting to watch the reactions of the members of the class who have come to Art Center from homes located far inland. For some, their first trip to Kaminski Beach is their first look at anything larger than a small lake or stream. Whether it is the sheer magnitude of the Pacific, the tang of the salt air or merely the freedom of thought and action encouraged by the out-of-doors that provides the incentive I do not know; but I do know that the average student can get as much done in a morning at the beach as he can in a full day spent in a murky studio.

*Continued on page 112*





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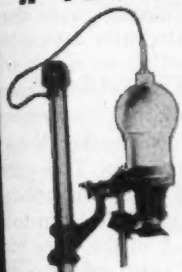
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## photo markets

### Graflex Contest

The 1949 Graflex Photo Contest, for amateur and professional photographers with prizes totalling \$5000 opens October 1st. All pictures made since December 1, 1948, with a Graphic, Graflex, Crown or Century camera will be eligible. There are no limitations on subject matter and the photographers will again be divided into three classes, according to experience: Teen-agers, Non-professionals and Professionals. The color division will be open to all three classes. Each of the three main classes will be divided into two divisions to make competition between different types of subject more even. The Action Division is open to spot news and action photographs of people, sports, candid shots, etc. The Feature Division is open to illustration, portrait, pictorial and general salon work.

Contestants may submit as many as 10 black-and-whites and 5 color entries. All prints and transparencies except prize-winners will be returned after the judging if accompanied by a return label. Negatives of prize-winning pictures will remain the property of the contestant. Graflex will require only a careful copy negative and non-exclusive permission to reproduce the picture in advertising and publicity material.

**Special Press Award** of \$300. All three groups of contestants are eligible for this award, which is in addition to other prizes. Any entry, to be eligible for this award must be accompanied by a tear sheet as proof of publication in any accredited magazine, newspaper or house organ.

Official contest rule folders are now available at all Graflex dealers, or by mail from Graflex, Inc., Roch. 8, N. Y. The contest closes Dec. 1, 1949.

### Last Call!

Mansfield Industries, Inc., 1227 Loyola Ave., Chicago 26, Illinois, is conducting a \$2000 prize contest open to all amateur photographers for the best 35mm pictures taken with a Gruenex Telephoto or Raydex Wide Angle Auxiliary Lens. Pictures will be

*Continued on page 131*

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3 1/4" x 4 1/4" (box of 6) Daylight or Tungsten.....List \$3.02  
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EMPTY 16MM MAGAZINES for Kodak, B & H, Revere, etc. SAVE MONEY by loading your own 16mm magazine film. BRAND NEW and in original packing. Instructions included. each 89c 12 for only \$10.00

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200 Ft.....\$1.89 400 Ft.....\$3.50

FINE GRAIN 24 W. Panatomic or Finapan

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BY RAGNAR PETERSEN  
AND JOHN ROGERS

## What are young West Coast photographers doing?

The younger generation of West Coast photographers are doing a different kind of job than their elders, Weston, Adams and Mortensen. What is it they are seeking?

One of them wrote us this: "I want to accomplish three things in my photographs. First, I want the picture to be honest; I dislike bums dressed up to look like Santa Claus, or old ladies made to look like comfortable rocking chairs, when they have a personality of their own. I aim for faithfulness to my subject, and the honesty to tell what it is. Second, if I have nothing to say, no emotion to put over, I don't snap the shutter. If my feeling for the subject distorts it, then I listen to my feelings because in photography I am only trying to respond to my feelings. I feel no obligation to represent the subject literally. Third, I try to be original in my viewpoint. I regard technique as the means for originality; never an end in itself. Otherwise you have only a class room exercise."

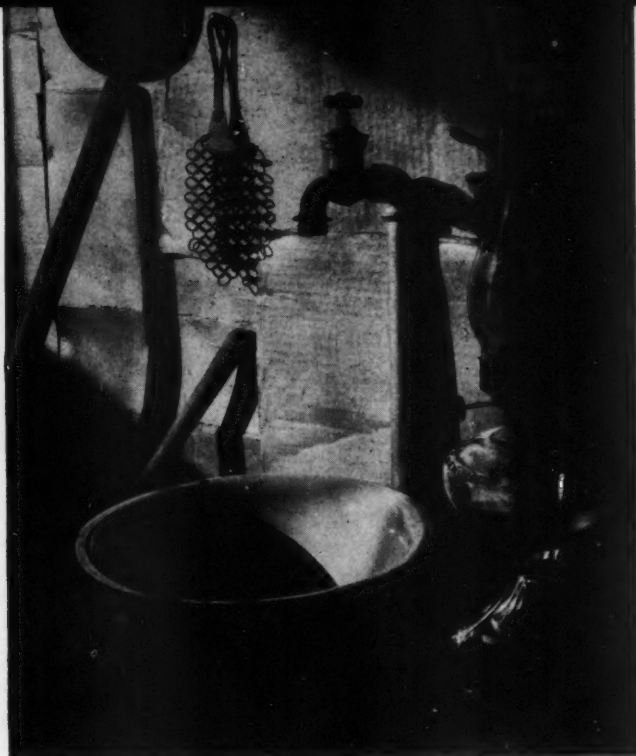
Well, we'll agree with most of that, too.

For the photographers who will tell us they would not bother to make a print from the negative by Mr. Hollingsworth on page 28, here's what a friend of his says: "This picture gives you Holly's attitude toward the rush-rush-rush, hustle-hurry-run of modern life. It's not a great picture, but it is a deliberate as well as unusual conception of how to say something."



BY MURIEL GREEN





BY DODY

*Two classic compositions  
and a social comment*

BY RAMON VEGA





XUM

BY CLYDE CHILDRESS

BY JACK NELSON



*Action the hard way...*



BY ERNEST BRAUN





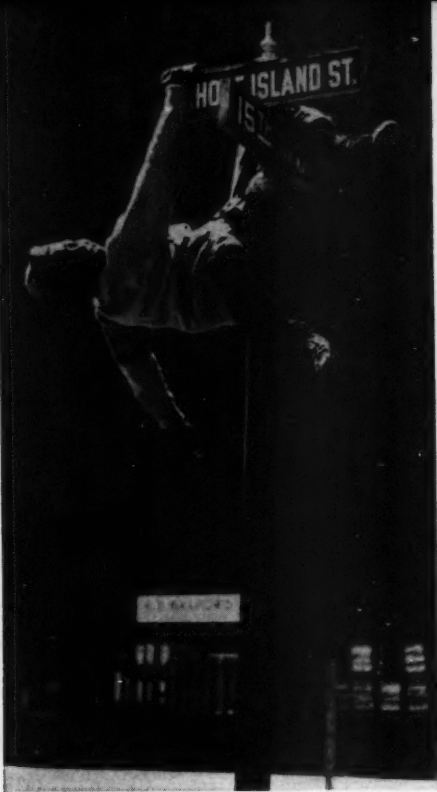
BY DON ORNITZ

*Some aspire, others retire . . .*

BY JACK NELSON







BY MURIEL GREEN

## *Californians have no inhibitions*

BY R. A. HOLLINGSWORTH





BY JOE FRANKLIN

XUM

# *focus* INFINITY

**The largest camera  
ever built is the 200-inch  
Hale Telescope atop  
Palomar Mountain**



A quiet word spoken in the stillness of the Palomar night and overhead there is a rumble of muffled thunder. The dome, itself a thousand tons of butt-welded steel plate, is rotating slowly into position. A shutter splits open from horizon to zenith. Through the dome, a 33-foot slice of sky appears.

Suspended between heavens and earth, the observer sits in the prime-focus cage of the 200-inch Hale Telescope. This night, and probably several more, he will remain there until the stars begin to fade at dawn. He will be stargazing, his eye intent upon a tiny point of light at the cross-hairs of his eye-piece, his hands ready for instant adjustments. But if astronomical history is made tonight, it will not be the observer's eye that records it. The night's observations will be recorded on the sensitized glass plate which rests before the astronomer, at the focus of the giant star camera.

## ***A Handful of 5x7 Plates***

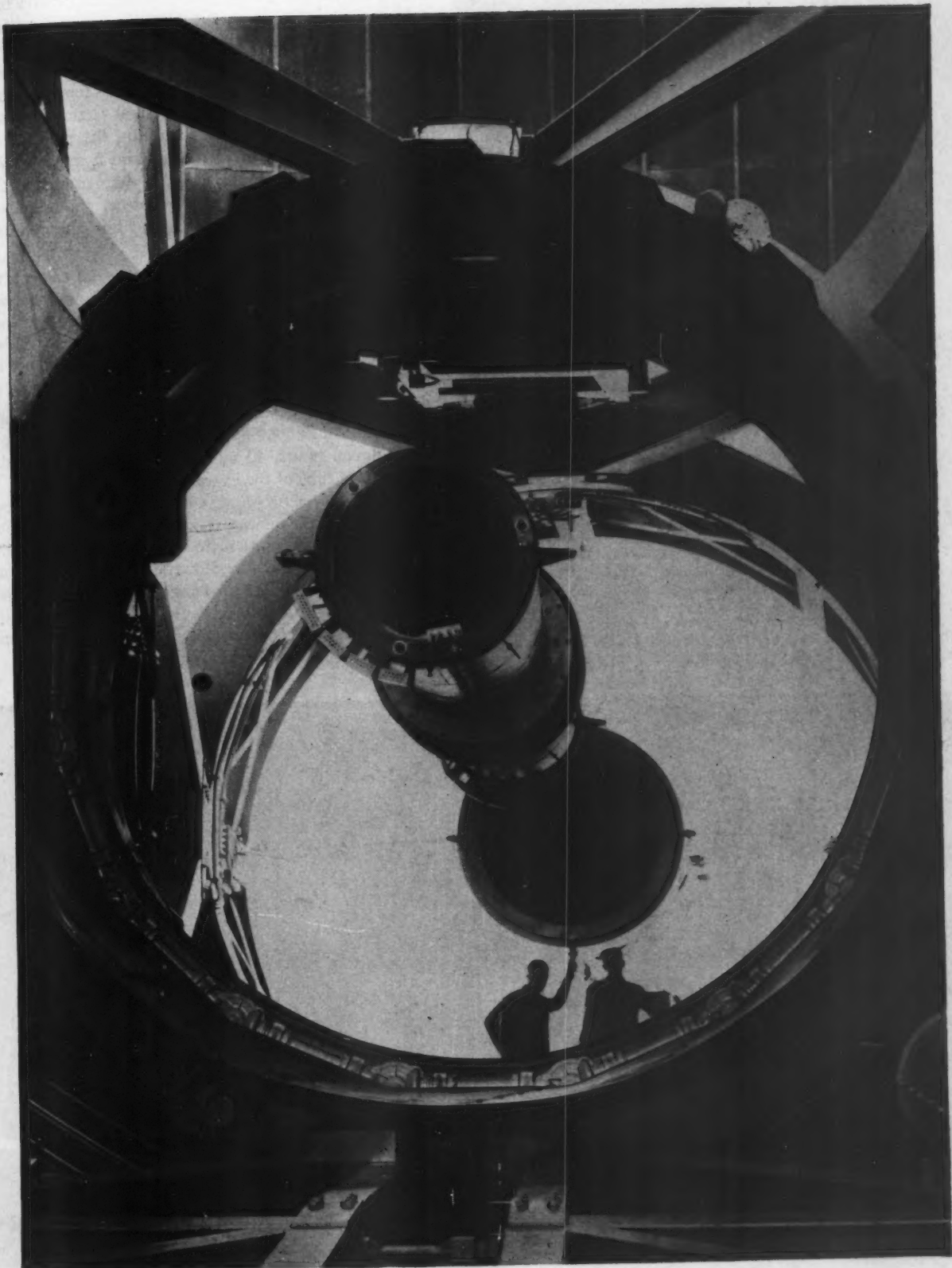
For the Hale Palomar Mountain Telescope, like other large telescopes, is actually a camera. Years ago, astronomers realized the shortcomings of human vision and memory for scientific observation. They substituted the photographic plate with its unerring sight and permanency. Now, after laboring twenty years and spending 63 million dollars, astronomers hope to distill some of the secrets of outer space from the 5x7-inch negatives made atop Palomar Mountain. The handful of plates which the observer will bring down with him toward dawn tomorrow may hold a clue to "why are we here?" and "where are we going?"

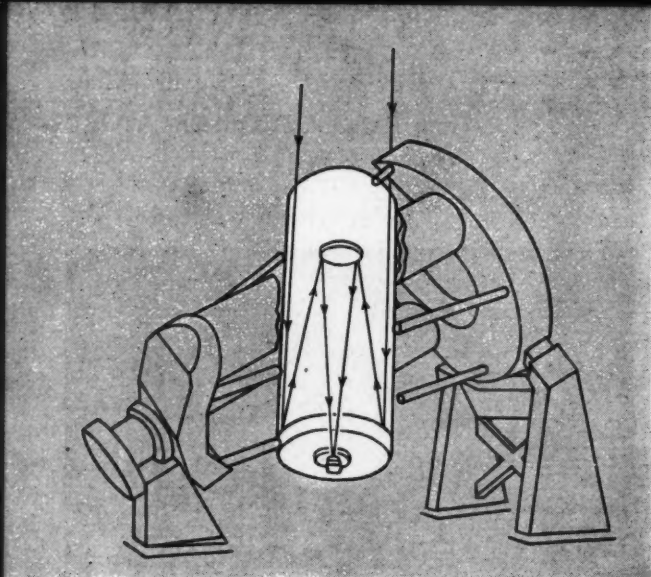
"Open the diaphragm," the intercom passes the word along between observer and assistant. Down the tube, 55 feet away, sixteen insulated steel leaves separate. The mirror comes to view. Myriads of reflected stars sparkle like diamonds.

COSMIC DUST, floating in vast clouds through space, form nebulae within our Milky Way. Illuminated by nearby bright stars they often appear as mysterious nether-worlds of smoke and flame, as in the enlargement at left from a small section of photographic plate. OPPOSITE: Reflected in a two-molecule layer of aluminum, a Caltech photographer snapped this observer's-eye view of the great 200-inch mirror. Surrounding the mirror can be seen the hinged leaves of the Hale Camera's adjustable diaphragm, shown here at full aperture.



by WILL LANE with photos  
from PALOMAR OBSERVATORY





ANATOMY of the Hale Camera is shown in the cutaway sketch above. Pivoted between the twin arms of the yoke mounting, the telescope tube (white area) swings north and south—this angle of swing astronomers call a star's declination. Telescope right ascension, which follows the apparent east-to-west motion of a star, is provided by rotation of the yoke. This turns upon two bearings (extreme right and left) supported so that their common axis points to the celestial pole, near the North Star. For maximum steadiness of the photographic image, the giant horseshoe-shaped north bearing floats upon a thin film of pressurized oil. In the drawing the Cassegrain mirror is shown in use and corresponds to Fig. B in the diagram below. Fig. A demonstrates the simplest form of reflecting telescope where parallel rays of starlight are reflected back to a focal point by a concave paraboloid mirror. This is the prime focus of the 200" mirror, and it is here that most direct star photography is done. Three cameras in one, the Hale instrument also has auxiliary convex mirrors for increasing this focal length. They provide the Cassegrain and Coude foci with relative apertures of F:16 and F:30. Too slow for direct photography these are used chiefly for spectroscopic analysis with exposures ranging up to eighty hours.

Invisible to the observer's eye is the target for tonight, a galaxy in the constellation of Leo, near Denebola. Far below, on the observatory floor, the assistant stands at the control board. The giant instrument is pointed dead on target and already he has set in motion the 14-foot worm wheel that drives the telescope in right ascension, tracking the stars across the heavens as the earth turns beneath them.

In the telescope's prime-focus cage, a six-foot cylinder built like the conning tower of a submarine, the observer adjusts himself on his steel chair. Between his knees is a raised tube mounting the plate base, similar to the back of a camera, and a small microscope focused on the plane of the photographic plate. With his eye fixed to the eyepiece, the observer watches the star which will guide him through the exposure.

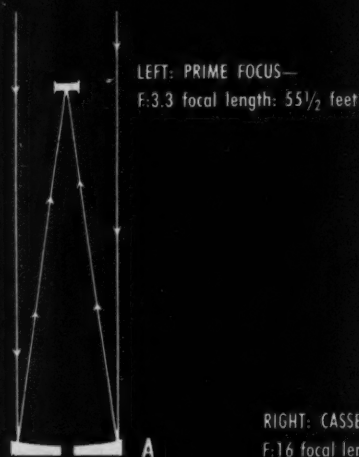
The Palomar camera like other celestial cameras is a fixed focus instrument set at infinity—the only focusing necessary is to compensate for temperature and atmospheric conditions. An invar bar measures the tube length in hundredths of a millimeter. From this the observer sets the film position, then draws the dark slide. Centered by the spiderweb hairlines of the eyepiece, the guide star stares unblinkingly.

"Eighteen hours, 42 minutes," the intercom reports the starting time of the exposure

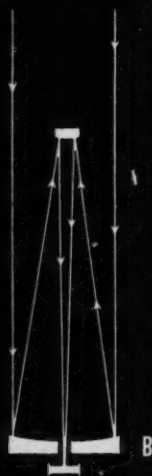
Now the equatorially-mounted star camera, guided by its automatic pilot, is gliding steadily, imperceptibly, in counter-rotation to the earth, tracking its objective across the sky. Slowly, the aged light from outer space is building an image on the photographic plate, charting unexplored regions of the universe.

How long an exposure will be required to capture these invisible star worlds photographically?

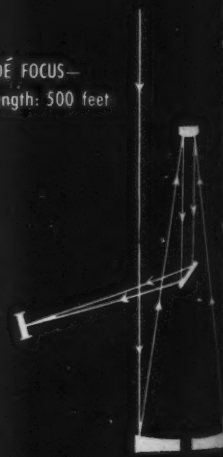
## CAMERAS OF PALOMAR OBSERVATORY



RIGHT: CASSEGRAIN FOCUS—  
F:16 focal length: 266 2/3 feet



RIGHT: COUDÉ FOCUS—  
F:30 focal length: 500 feet



## HOW FO

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2-in  
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A star image  
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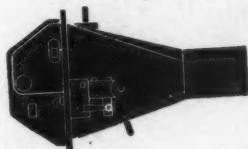
35mm Camera  
focal length: 2"



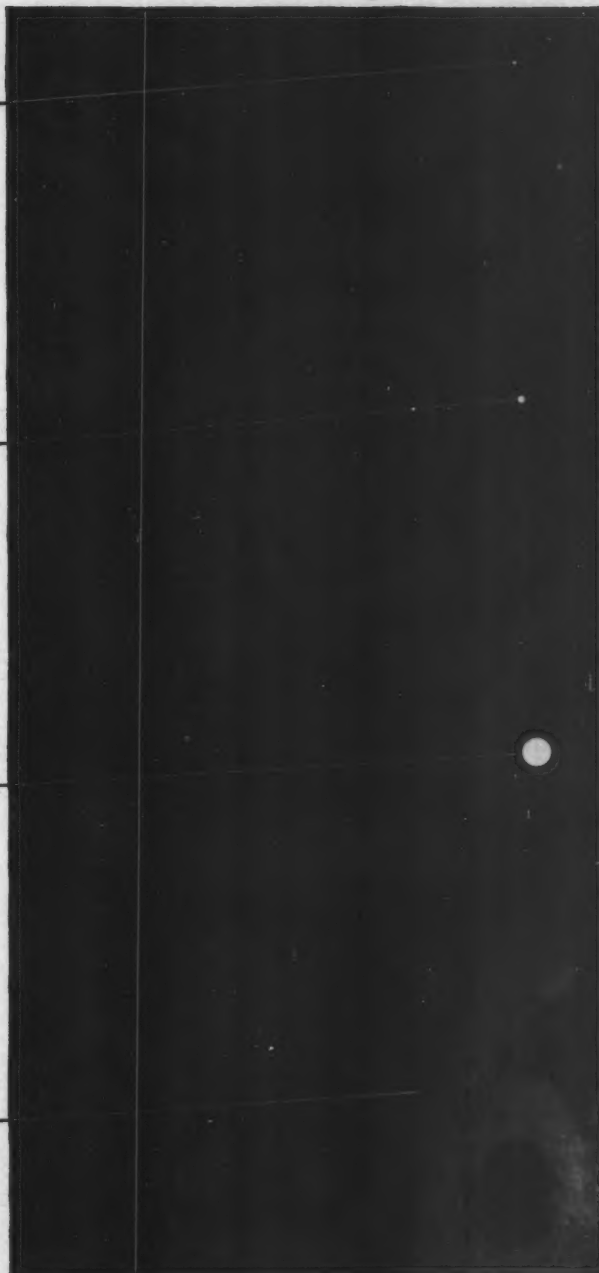
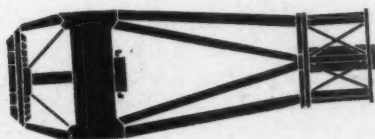
Press Camera  
focal length: 8"



Aerial Camera  
focal length: 24"



Hale Star Camera  
focal length: 666"



## HOW FOUR DIFFERENT CAMERAS SEE THE MOON

AN OPTICAL FACT that applies to both lenses and mirrors states magnification is in direct proportion to focal length. Thus an image formed at the Palomar Telescope's prime focus (F.L.: 666") is 333 times larger than the image formed by a 2" lens. If four representative cameras were set up to photograph the moon, their images would measure up somewhat as follows:

- 2-inch lens: .018" diam. (about 1/64 inch)
- 8-inch lens: .072" diam. (about 1/16 inch)
- 24-inch lens: .216" diam. (about 1/4 inch)
- 666-inch mirror: 6.000" diam.

A star image produced by any camera, however, is only a pinpoint.  
*Moon photo by Griffith Observatory*

In 1954, when the planet Mars will be in favorable position, Palomar astronomers hope to throw new light on a century-old argument concerning the so-called canals of Mars. They will use a yellow filter and expect to make exposures as fast as 1/60 second. Venus, however, veiled in bright white clouds, could be photographed in 1/100 second. For these rapid exposures, a Speed Graphic back with a focal-plane shutter would replace the standard plate base.

But the target for tonight is a faint extragalactic



nebula far, far out in space. A five-minute exposure should show all the stars that can be seen with the eye. When exposure time is continued, many new stars make their appearance through the cumulative power of the photographic emulsion. For photographing the farthest known reaches of space with maximum detail, the exposure is often extended as much

as several hours. The exact amount of this increase depends upon visibility conditions, called atmospheric "seeing."

Is the guide star small, bright, and stationary? Or is it large, fuzzy, wavering? The seeing is estimated on a scale of one to ten. On about twenty nights each year, the seeing will be judged nine or ten, and on these nights the photographs will be taken that add most to human knowledge.

### *The World of the Stars*

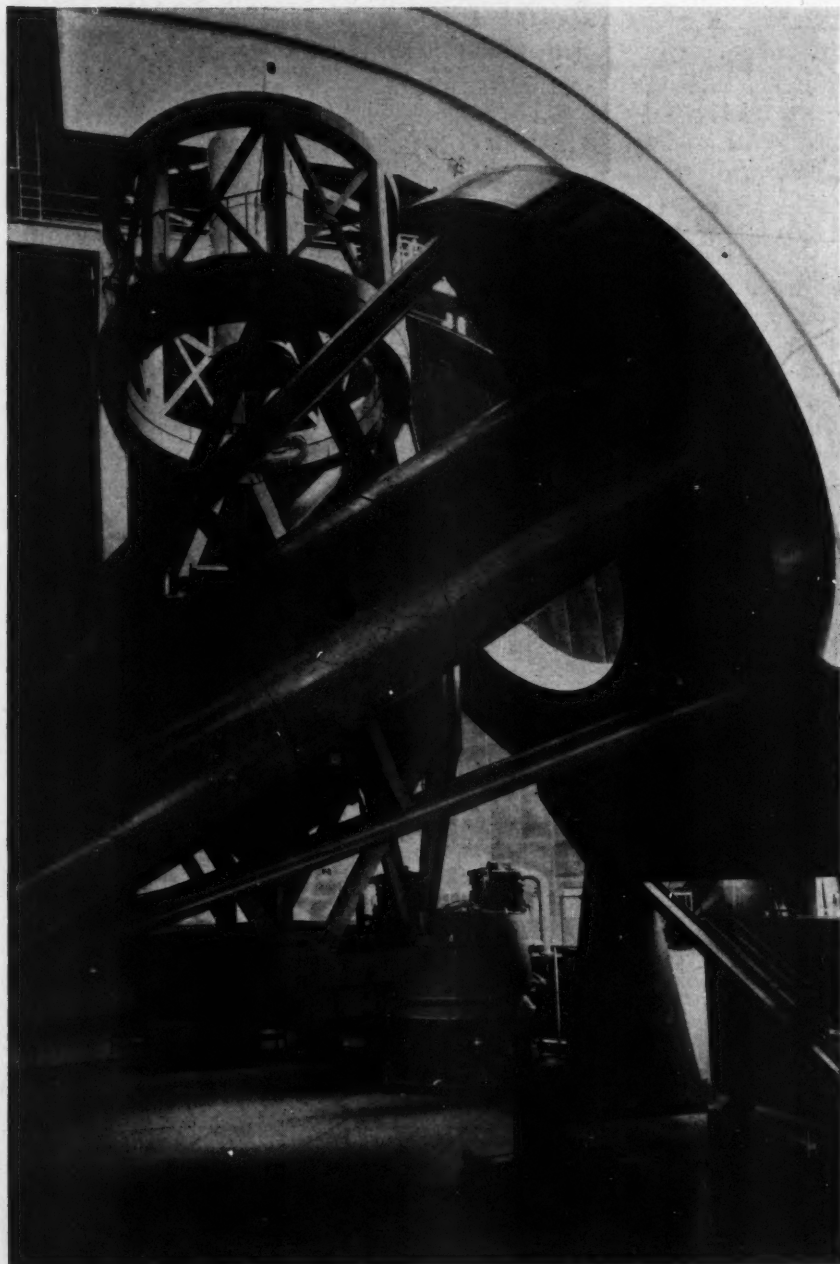
To understand the real meaning of the work that's progressing atop Palomar Mountain, like an astronomer one must be able to conceive the inconceivable.

The Milky Way, so familiar a splash across the clear summer sky, contains about 100 billion stars, of which our sun is only one located somewhere near its outer edge. Even in the shorthand notation of astronomy, our galaxy is a tremendous awe-inspiring thing. More than one hundred thousand light years across, it spreads its starry arms through the heavens in a gigantic spiral disk. Light, fleeting along at better than 186,000 miles per second, provides the astronomical unit of measure. The light year, or distance light travels during one year, amounts in earth terms to a fantastic 5,870 billion miles.

Four and one-third light years distant from our own sun is another sun, much smaller but similar to the one we know. This is Proxima Centauri, nearest neighbor to our solar system. Sprinkled further and further out, separated by incredible stretches of nothingness, are the other suns that make up our stellar system.

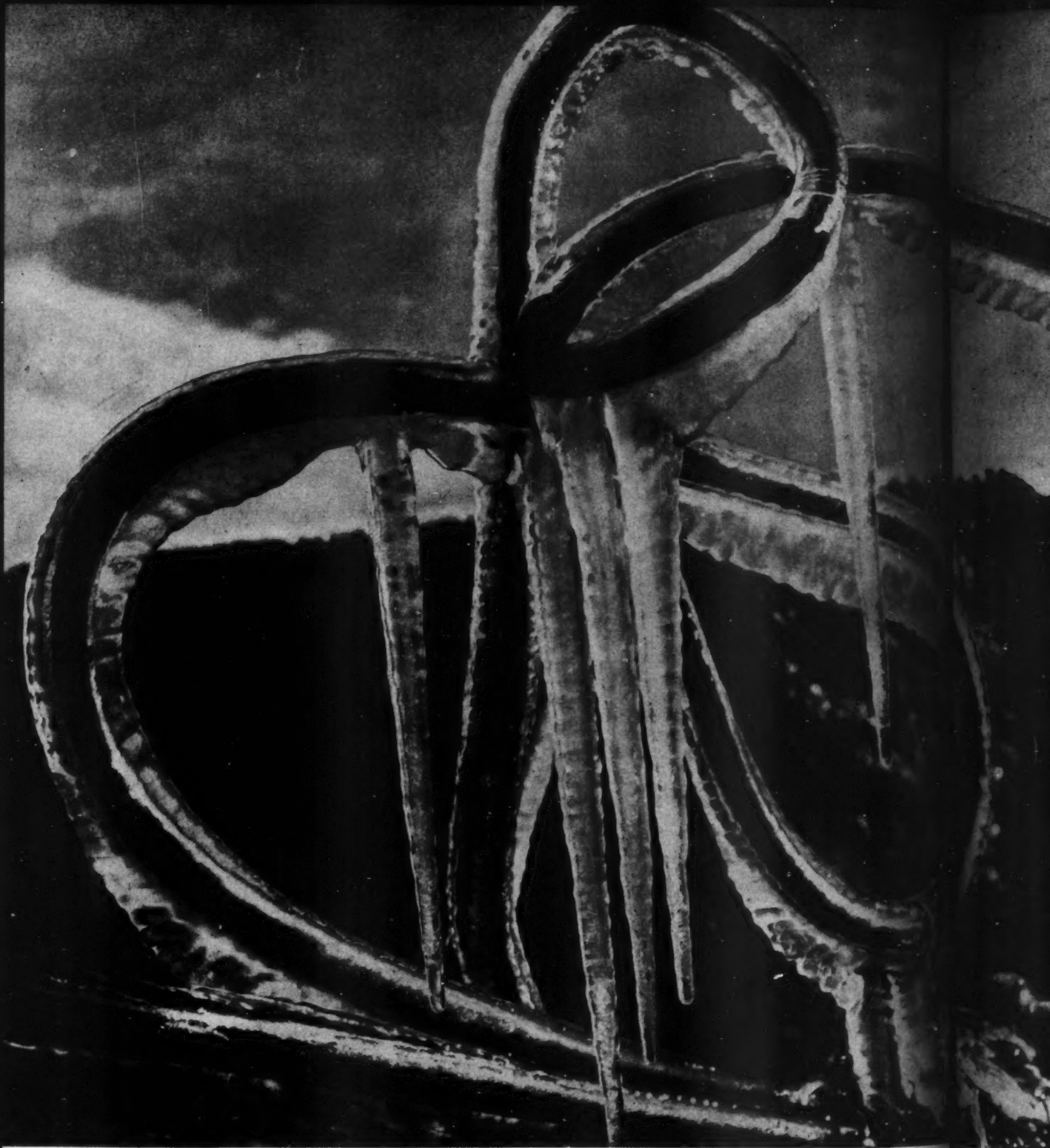
Although, like Proxima, most of these very much resemble our own sun, there are many that are far different. Some are double stars, called binaries, that revolve about each other in a miraculous balance.

*Continued on page 122*



PROFILE of the Hale Camera (above). The open tube of I-beams holds the 200-inch diameter mirror at its lower end, the observer's station at outer end. The man standing on aluminizing tank at rear indicates the tremendous scale of Palomar Observatory. On the floor, beneath the north pier (lower right), is the telescope control panel. OPPOSITE: NGC 2403 is the euphonious tag astronomers use to identify this island universe some 2½ million light years away. It appears in the constellation of Camelopardus and like the Milky Way is one of millions, perhaps billions, of stellar systems scattered through space. "NGC" refers to astronomy's New General Catalog.





KING WINTER'S touch on one of the reinforcing irons of a Lake Michigan break-water.

by REINO KOTILAINEN **IT'S COLD**

**O**



## *Your camera equipment needs special protection for winter shooting*

**O**N days when the mercury takes a nose-dive, one of the most common picture-spoiling faults with both black-and-white and color film is overexposure. While most of us are inclined to suspect a faulty exposure meter or inferior film when this happens, the blame is probably our own. Perhaps we failed to prepare our equipment for winter shooting and the negatives became overexposed because a camera shutter, like an engine, fails to respond as quickly in freezing weather as it does in warm weather.

The Air Materiel Command Headquarters at Wright-Patterson Air Force Base, Dayton, has made extensive studies of cold weather photographic problems. These reveal that while most cameras and accessories are designed for satisfactory operation over a wide range of temperatures, it is advisable to winterize equipment which is to be used at below + 40° Fahrenheit. This is particularly true of new equipment which will freeze up quicker than that which has been broken in.

### ***Between-the-Lens-Shutters***

Only a trained photographic camera repairman should take a shutter apart. If the shutter has not been lubricated recently, it should be inspected and re-lubricated. Malfunctioning of shutters in cold weather is largely due to lack of lubrication, or to the use of improper lubricants.

At temperatures below + 40° Fahrenheit, shutters may operate at speeds as much as 10% less than in moderate temperatures. Way down at - 65° F., the speed will be as much as 50% slower than at moderate temperatures. In making pictures outdoors in winter, it is a good idea to adjust your shutter speed to give extra leeway. With miniature cameras particularly, it is wise to increase exposure by 50% in very cold weather so as to compensate for shutter slow-down.

If a shutter "freezes up" or becomes sticky in winter weather, a drop or two of carbon tetrachloride, the common

RAY ATKESON



PHOTO BY GENE IDAKA

# OUTSIDE!



**A TRANSPARENT** plastic shield will protect your subjects from flying glass should a flash bulb explode during frigid weather. You can make a clear plastic shield yourself, or buy one from your dealer at prices ranging up to \$7. The shield should be hinged to the front of the reflector so that bulbs can be changed quickly. No exposure change is necessary if clear plastic is used.

SNOW was falling when W. M. Feathers made this picture of a solitary passenger awaiting the midnight train. A 3-minute exposure at F:8 on Super XX film, and 9 minutes of development in Ansco 17, produced a negative that retained excellent detail even to the glitter of snowflakes under the street lamp.



non-explosive cleaning solution, on the leaves of the shutter diaphragm will help. Click the shutter a few times after applying it to work the solution in thoroughly. A toothpick with a tiny wad of cotton on the end makes a good applicator.

### **Focal-Plane Shutters**

The cloth in most of today's focal plane shutters has been impregnated with reclaimed rubber, which is not as flexible as latex rubber used before the war. In order to overcome this stiffness in very cold weather it may be necessary to increase the tension of the bottom spring roller about four turns from the usual eight to twelve.

### **Lenses**

No special precautions are required for very recently manufactured lens elements. Most new lenses have been cemented with a cold-resistant synthetic cement. Lenses produced before 1945 were, for the most part, cemented with Balsam. Rapid changes in temperature may produce cracking of the cement, splitting the elements apart. With all lenses, abrupt temperature changes should be avoided if possible.

Most lenses will not give sharp definition if there is a great temperature difference between the back element and the front. The lens will generally be out-of-focus while its temperature is changing. Therefore, it is best not to try to take pictures in cold air with a camera that has just been in a warm house.

To prevent moisture condensation on the lens, it is advisable to keep the camera away from the body as

much as possible. The lens or the camera body may frost up easily.

Condensation can be avoided by focusing on a warm object, such as a person's face, and then focusing on the subject. This can be done by keeping the camera away from the body as

much as possible, and to avoid breathing upon either the lens or the viewing glass. Both have a tendency to frost up easily in the cold.

Condensation of breath sometimes hinders accurate focusing on a ground glass, when the condensation fogs or freezes on the glass. A paper sack, such as is used at grocery stores, can be used to make an extension focusing hood. Cut the bottom out of the sack and fit it over the hood. Attach to the hood with masking tape. This extension will minimize condensation by keeping your breath off the glass.

The lens board can be sanded down very, very slightly (about 0.01 inch) to allow for contraction in winter. If the clamps holding a plastic lens board are tight, they should be loosened a little to prevent the plastic from breaking as it becomes brittle in the cold.

#### *Camera Body*

All leather parts of the camera should be cleaned with a good saddle soap, and protected by a good moisture-resistant leather dressing. Both may be obtained from shoemakers or in leather goods shops.

HAROLD M. LAMBERT





If your camera has a bellows, an application of a bellows dressing preparation, available from any photo supply dealer, is helpful. Preparations having a plastic base should be avoided, since cold will make the plastic brittle and may crack the bellows.

When opening the camera in the cold, pull out the bellows slowly. In case moisture has frozen the sections of the bellows together, a little care will keep it from cracking.

Light applications of gear grease for cameras, also available at camera shops, may be put on all *exposed* gear teeth to prevent freezing.

The most important thing to do is to wipe the camera dry after every use in cold weather. Cold equipment brought into warm air will condense moisture from vapor in the warm room. This condensation, or "sweating," is harmful to equipment. A good rub-down with an absorbent cloth is recommended after every outdoor picture-taking expedition in winter.

If you use a cable release, be certain to check it carefully before and after each use outdoors in winter. Cold, damp weather may cause the moving parts to freeze, or moisture condensation may produce rust. As a preventive measure, dip the entire cable release assembly in a solution of carbon tetrachloride and place it in a warm place to dry after it has been used in bad weather.

On cold, damp, or snowy days, some photographers protect their cameras by carrying them in a large plastic bag, such as is used to keep vegetables in a refrigerator. These plastic bags come in various sizes, and can easily be carried in the pocket or camera case.

### **Flash Units**

If you plan to do outside flash photography this winter, be certain to lay in a fresh supply of batteries for your flash gun. Low temperatures have a weakening effect on batteries.

Cold weather operations sometimes have a tendency to increase flash bulb explosions, causing the glass bulb to shatter violently. A clear plastic sheet may be attached by a hinge to the front of the flash reflector. Such a shield can be either purchased ready made, or sawn from sheet plastic and attached at home.

In frigid weather, a non-conducting tarnish is likely to form on the base tips of flash photo bulbs. Sanding the tips before use removes the film and makes the flash more certain. A small square of sandpaper, glued with rubber cement so it can be readily stripped off, attached to the side or back of the camera body will serve the purpose and act as a handy reminder.

### **Film**

Film becomes extremely brittle at low temperatures, and is subject to cracking or breaking. Special care must be taken in loading motion picture and roll film cameras to prevent possible damage to the film. A frayed edge can destroy a whole roll of film.

In using a film pack, be certain to pull the pack

tabs slowly, steadily, and straight out because the cement binding paper which holds the paper tab to the film may freeze in extreme cold and pull away from the film. Due to low relative humidity, static electricity marks may appear on film if it is pulled too rapidly from the film pack.

At about  $-20^{\circ}\text{F}$ . a loss of film speed of about 50% may be expected. However, the sensitivity of various types of films is different at low temperatures. If you are going to go in for sub-zero photography in a big way, it is a good idea to make some test exposures.

Static electricity, common in cold weather, may attract and hold dust particles on negatives used for printing and enlarging. To remove the dust from negatives, pass a statically charged glass rod over both surfaces of the film. The glass rod can be charged by rubbing it briskly with your wife's fur neckpiece or a corner of one of her silk dresses. A pipe cleaner can also be used, as a brush, to dust negatives if other materials are not handy.

If you should have to develop films in a cold room, where there is danger of the negatives freezing during drying, here is another suggestion. After the film has been almost completely washed, dip it in a solution of 1 part glacial acetic acid to 100 parts water for a few seconds. Then complete the washing in the usual manner. The film will dry without freezing.

### **Exposure Meters**

The use of exposure meters to determine correct exposures at low temperatures must be governed by experience and judgment. All the factors that enter into exposure calculation, except F-stop, are subject to variation at low temperatures. These include meter reading, film speed, shutter speed. At low temperatures the correct exposure must be determined by the photographer, based on test exposures or previous experience.

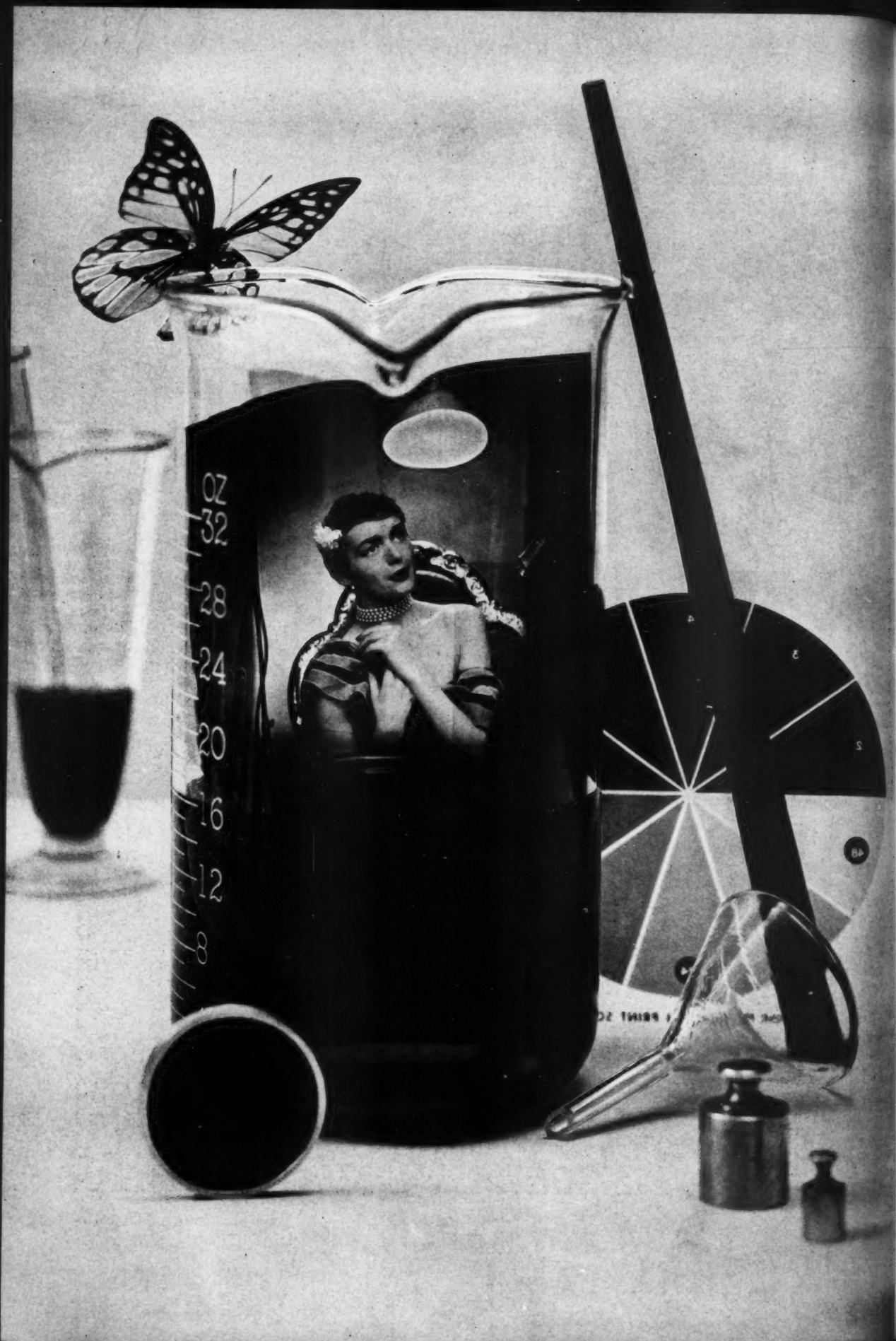
### **Range Finder**

To insure good cold weather operation of your range finder, two things are necessary. First, place a tiny bit of lubricating graphite on the lower reflector bearing. Second, slightly increase the tension on any springs (such as cam and indicator springs) to compensate for metal contraction due to cold. If you are

*Continued on page 121*

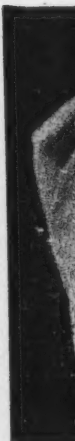
THE INSTRUCTION BOOKS say to shoot Kodachrome during the middle hours of the day and to be sure that the subject is evenly, flatly, lighted. But to get mood into color as well as in black and white photographs we are learning that it is sometimes better to forget all about the rules. That is obviously what Thomas Limborg did in making this color shot that has the frosty feeling of a winter afternoon. To give the third dimension he set up his camera so that his scene was backlighted. Then, to eliminate the flare that was bound to result from having the sun striking his lens directly, he moved the camera so that a pole blocked out the direct rays. A full exposure (1 second at F:5.6) gave good detail to the foreground shadows and recorded the orange light as it looked to the eye.





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## IDEAS FOR UNUSUAL PICTURES

One of the happy opportunities open to you as a photographer is exploring the frontiers of experimental photography. It is a step nearer the world of ideas, as well as a stimulant to creative imagination, to experiment with the many chemical, optical and mechanical techniques used in producing these pictures. You are freed from the limitations of conventional picture-making and work in a photographic realm where only your fancy is your guide.

The twelve techniques of experimental photography presented here are guaranteed not to produce a single commonplace photo, if only they are tempered with a little imagination. Each method outlined is entirely possible for the average amateur to carry out himself, with variations of his own. Some of these unusual pictures are made in the camera, others are done in the processing trays, or with printers and enlargers.

Each technique allows you countless variations, for all may be used singly or in combination. Thus, you may start out with a solarization in mind, and finish with a still more abstract print produced by sandwiching together both a solarized and a normal negative.

Although the ideas here represent only a small sampling from a vast field of photographic possibilities, they demonstrate simple and important basic techniques: distortion, as with the ferrotype tin; enlargement, as with the magnified lock; photo-chemistry, as in solarization; diffusion, as in vaseline vignettes; and light patterns, as in pendulum pictures.

Elsewhere in this issue of *Modern Photography* you will find more detailed articles on making pendulum patterns and distortion photographs. Such unconventional photographs are classified by some purists as "tricks," but rapidly they are becoming far more than illusions to

*Text continued on page 46*

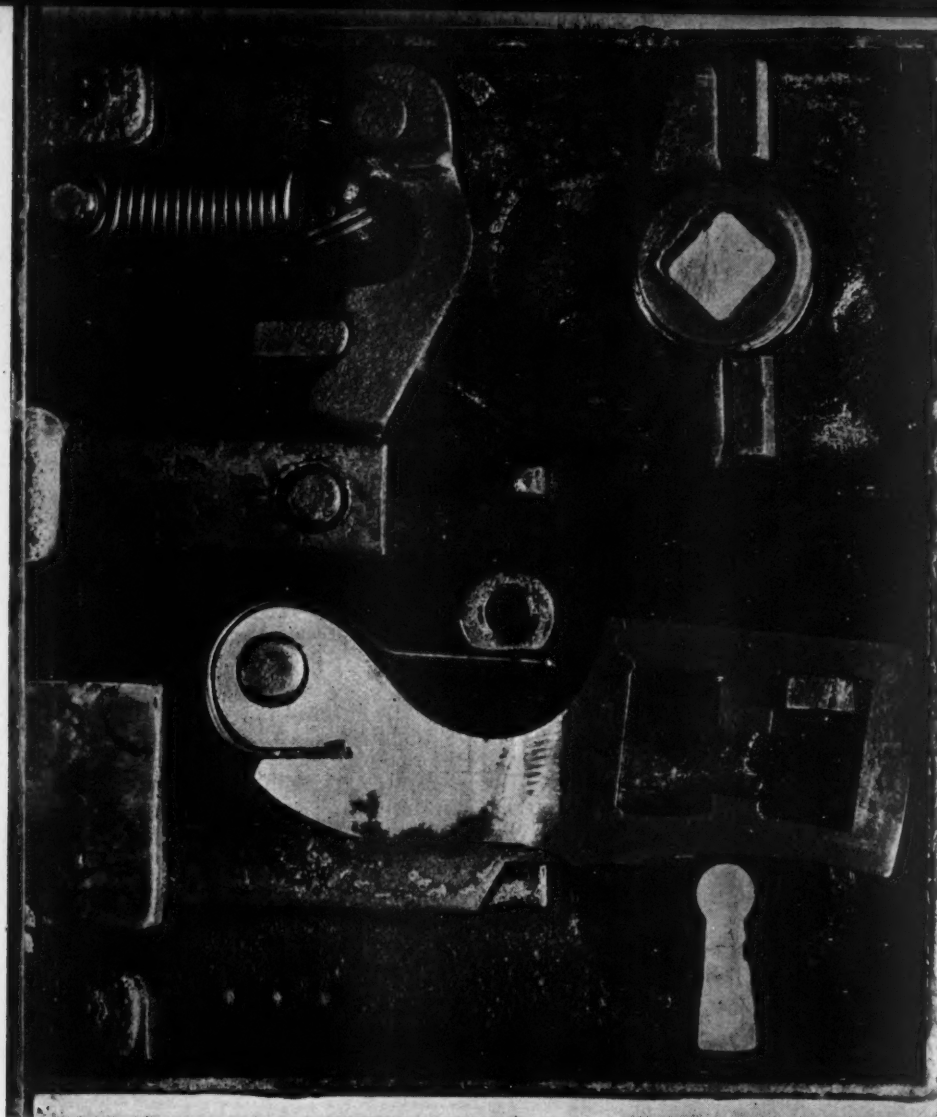
**1. RETICULATION**, or minute wrinkles in the gelatin emulsion, were produced by Derald Martin by dipping this negative in hot water for two minutes after washing. An amazing variety of patterns can be produced by varying water temperature (between 80° to 100° F.) and the time of immersion.



**2. FERROTYPE TIN DISTORTION**, reminiscent of the warped mirrors of an amusement park, helps this lad laugh at himself. The highly polished surface of the ferrotype plate can be curved to produce varied and fantastic effects. Another distortion technique is described on page 48. *Photo: Black Star.*



◀ **EXPERIMENTAL** photography is interpreted by Ben Rose in the symbolic Kodachrome transparency on the opposite page.



**3. SELECTIVE MAGNIFICATION** transforms this old-fashioned lock into a cubistic design in the modern tradition. Magnification is sometimes accomplished by blowing-up a small area of negative, but best results are obtained by using a proxar-type supplementary lens. A lens of 3+ diopters can be used alone, or combined with another lens for greater magnification. *Photo: Bill Diffenderfer.*

**4. REVERSE PRINTING** can produce dramatic pictures, as in this one by Gene Idaka; here the edge-lighted contours of the model's features are set off in striking relief. Reverse prints are the result of carrying the print making one step farther than usual. If you make a positive transparency from your camera negative, by projecting it on film or thin photographic paper, you can then use it (after development) to make a final print which will be reversed.

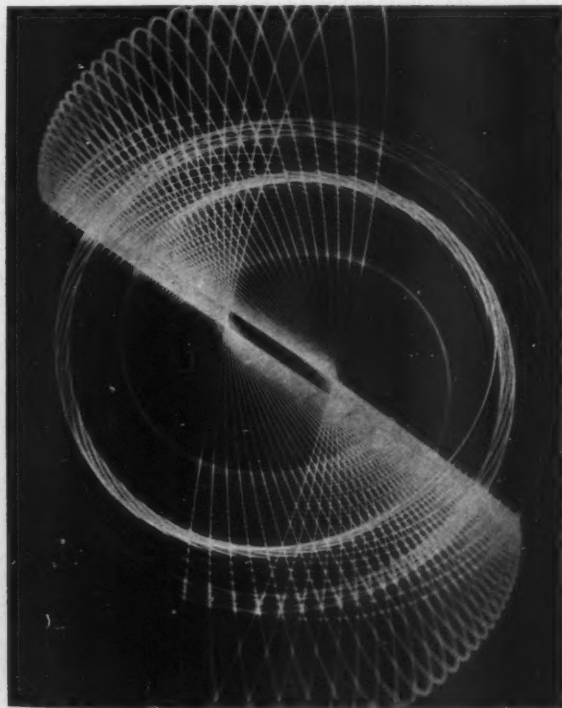


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**5. SOLARIZATION**, a partial reversal of the negative image, is accomplished by flashing a negative with weak light when development is two-thirds complete. A one-second exposure at a distance of about three feet from a 10-watt frosted white bulb will usually produce a normal degree of solarization. Larry Karns used several spotlights to give hard, sharply-defined highlighting to the mannequin's figure, shown above, for these areas undergo complete reversal from black to white (in the negative) and give this bold kind of solarization.



**6. PENDULUM PATTERNS** are the photographic record of the oscillations of a pendulum, to the bottom of which is attached a light. The pendulum swings freely above the open camera lens, and its path is recorded dramatically on film. See page 70 for a discussion of this interesting technique. Photo: Goldscholl.

**7. MODERN TEXTURED** glass makes possible a natural distortion of backlighting subjects, as in this photograph for Wide World taken through the panel of an office door. It is only necessary to focus the lens and snap the shutter—the glass does all the rest. Ribbed glass, glass blocks, and other transparent and translucent materials can also be used.



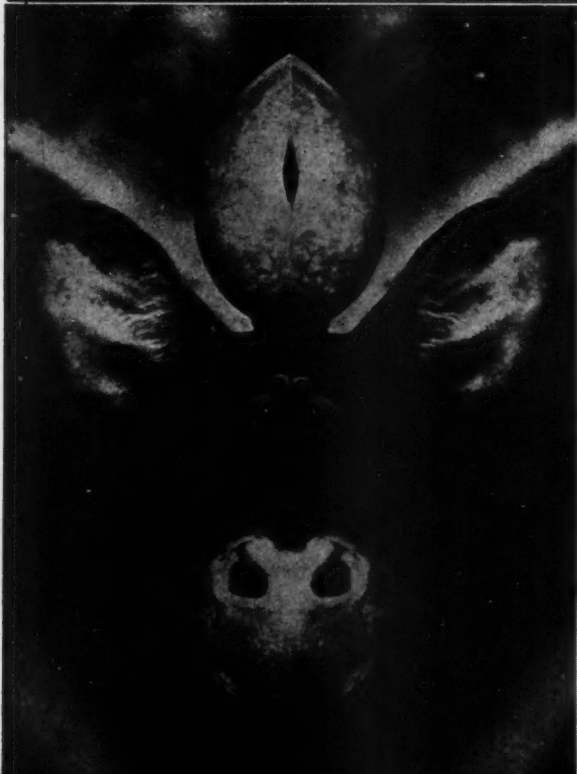
**8. VASELINE VIGNETTES** are photographs taken through a sheet of clear optical glass which has carefully been spread with vaseline around the edges. The result, due to refraction and diffusion by the grease, here simulates an eerie fog veiling the figure of Banquo. Roman Freulich used a 12x12" sheet of glass placed about 15 inches in front of the camera lens in taking this still for Republic Productions' "Macbeth."





**9. SANDWICHED NEGATIVES** (right) made by taping two negatives together to form a single one, allowed the photographer to combine in one print two photos to form an impressionistic snowfall. *Photo: Black Star.*

**10. REFRACTION** (below) produces a giant claw when a normal hand is held under water. A small diaphragm stop (F:16 or F:22) is necessary to achieve reasonable depth of field in such pictures, which are usually close-ups. *Photo: Black Star.*



startle people. Today they are being used by serious photographers to expand the sphere of photography, both commercially and artistically. Leaders in contemporary design, too, are finding these experimental photos a source of inspiration and a means for clarifying their own ideas.

To the examples of experimental photography shown here can be added many other unusual photographic techniques that are often used with telling effect. Photographs that look like sculpture, appropriately called bas-reliefs, are produced by printing from a negative and a positive transparency held in contact, but very slightly out of register. Photograms, or pictures made without a camera, are created by placing objects directly on a sheet of photographic paper and exposing the paper to light. From a variety of small objects endless abstract patterns can be formed.

These are a few of the fields of photographic experimentation where exploration already has begun. Still there remain other practically virgin fields for the photographer with an experimental bent: diffraction patterns, pinhole photography, burned emulsion, luminescent chemicals, to mention several. As a source of amusement and relaxation, or as serious work, developing your own ideas along these varied lines can give you many pleasant, stimulating hours with your camera and in your darkroom.

**11. MIRROR TRICKS** can produce unusual pictures (left). That this beady-eyed monster is in actuality an orthodox cow can be seen quite readily by covering half the picture with a sheet of paper. Such fantasies are made by cutting a print and placing the segment next to a mirror at a 90° angle, then re-photographing the picture and its image. *Photo: Black Star.*

**12. REFLECTION IN WATER** (opposite) gives a Picasso-like quality of distortion and refraction. Wavelets formed by the swimming ducklings (seen when picture is inverted) provided the distortion in this photograph by Philippe Halsman.

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# BERENICE ABBOTT'S NEW *distorter*

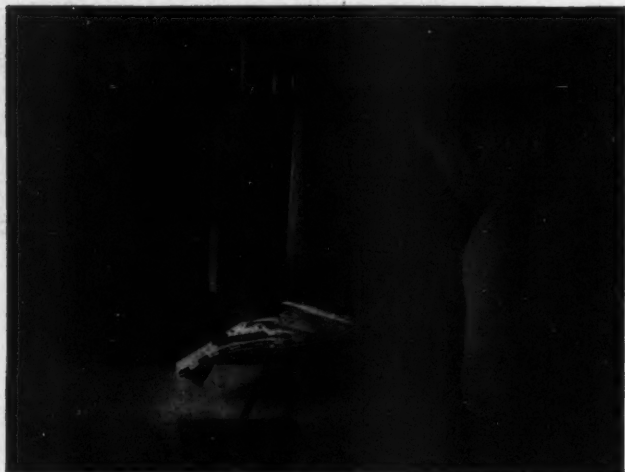


**B**ERENICE ABBOTT, who knows how to make a straight print about as well as anyone in the country, has devised a distorter that gives some strange and wonderful effects when used underneath an enlarger. Essentially her invention is a flexible easel mounted on a flexible tubing which in turn is mounted on a small square stand. The easel has framework of metal which may be bent in any direction, and will hold this position. It is covered with sheet rubber and along two edges are a series of clamps to hold a sheet of single-weight enlarging paper in place. The paper can be held down on the other two edges with paper pad clamps.

The distorter has great artistic possibilities as well as providing the means for some good, clean photographic fun. The humorous type of selective distortion that can be produced with Miss Abbott's invention was used during the war to show Army Air Force pilots the way a bomber reacts to overcontrol.

A series of photographic posters showed an A-20 with its nose bent up in a quick

*Continued on page 110*



THE STRAIGHT PHOTO of the New York skyline, above, was made with a Kodak Reflex on a hot summer Saturday night. The exposure was 2 seconds at F:4.5 on Super XX film. The negative was projected from an enlarger to the Abbott distorter adjusted as shown on left. Considerable dodging was necessary on portions of the print. The enlarger lens was stopped down to F:16 so that the varying planes would be in focus. The finished print, opposite, shows the shape of the distortion. Normally it would be trimmed square. Notice the panting face at the top of the Chrysler Building.





A CONTORTED PRINT made on the Abbott distorter.  
Notch at left was made by the clamp that held paper to easel.



A CAT can look at a king, and English kids like their guards.—WHITE, DAILY GRAPHIC.

# MADE in ENGLAND

News  
photog

By BAE

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**News photography was born in England 94 years ago when Roger Fenton photographed the Crimean War. Here is what British cameramen are doing now.**

By BARNET SAIDMAN

It is fall. The sun is bright and the air is pungent with the smell of burning leaves. I whistle my way into the office of the Picture Editor. "Beautiful morning, isn't it?"

"Yes," says the Picture Editor. He shuffles some papers on his desk. "Crime story breaking in Kensington. Scotland Yard men digging for three bodies. Take a reporter with you."

So I go to Kensington.

It is pouring down rain the next morning. I arrive at the office feeling downcast. "Good morning," the Picture Editor says cheerfully. "Quiet today, but tomorrow is the first official day of winter. How about a pretty-pretty 'goodbye to autumn' picture for the front page?"

So I go to the Park...

News photography, that is to say "on the spot" news coverage of history in the making, was born in England. Fox Talbot's discoveries in the Lacock Abbey of

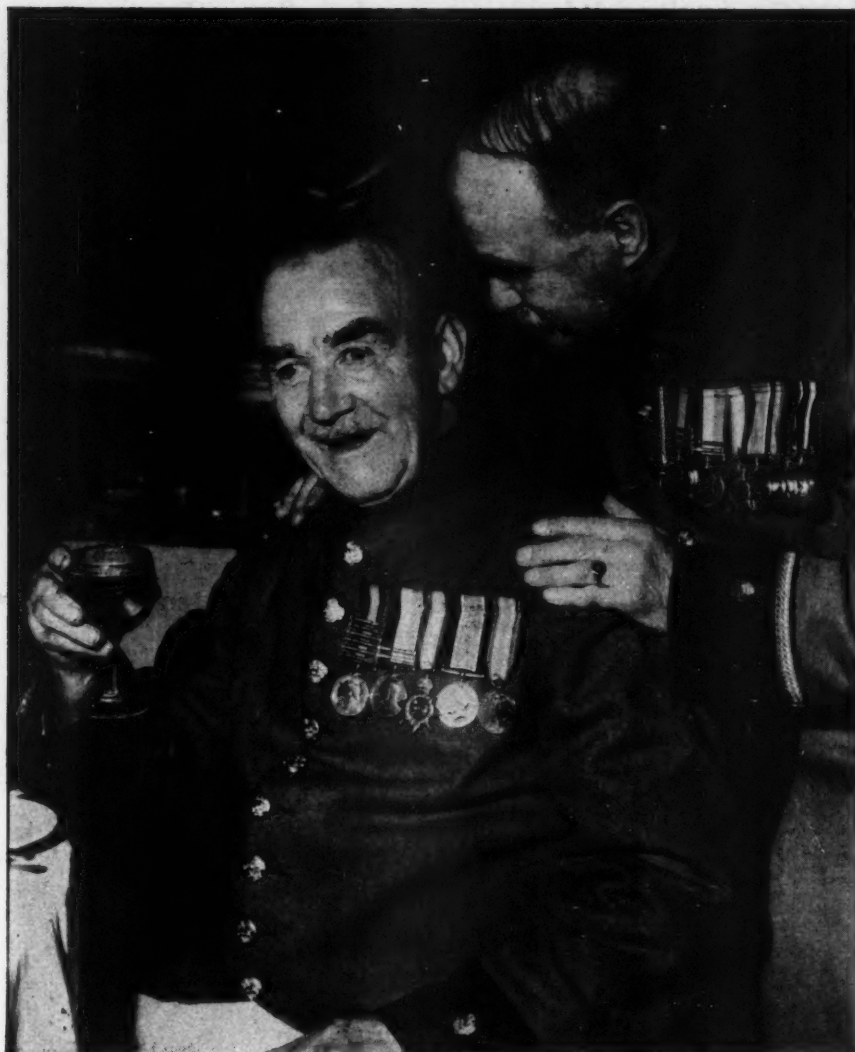
Wiltshire laid the foundation, of course, but it was Roger Fenton's photographs of the Crimean battlefields, made ninety-four years ago, that fathered the profession of news photography.

As one of five brothers who help supply photographic grist for the daily press, I am proud to be a British news photographer. Naturally we have much in common with American news photographers. We, too, are adventurers, thriving on the breathless business of dashing off on a moment's notice to photograph anything from a litter of newborn pups to a Yorkshire colliery disaster. Life, love, laughter, death, hatred, anguish—all of man's emotions must be recorded in the fleeting instant they are alive and real. There is seldom a chance to re-take a picture. Our job is to sense and interpret the feeling of the occasion, gay or tragic, and to highlight it *then*. We are expected to meet on level terms the famous and infamous, the cops and crooks, the beggars and the kings and to photo-

DRAGGING DIRT for first place—a sports action shot by George Franklin.—PA—REUTER.







**FIGHTING MEN** once, dignified old guardsmen now, two bemedalled survivors of the Boer War relive the past in a London cafe. Barnet Saidman used flash to record the spirit of this reunion for the *News Chronicle*. On a different kind of an assignment, David Johnson of the *Daily Graphic* visited the zoo to photograph Sally, the Malayan bear, indulging her thirst for iced drinks. This picture was made for a general interest feature article rather than for spot news appeal. If any single word could be said to describe the average British newspaper picture, that word would be "restraint." The "shock" pictures so dear to American tabloids of a man lying in a pool of blood or a woman jumping out of a window are rarely seen in England. All photos reproduced here are from the *News Pictures of the Year* competition, jointly sponsored by the Encyclopedia Britannica Book of the Year and the Univ. of Missouri School of Journalism.

graph them all with understanding. We are a strange mixture, both thick-skinned and highly sensitive. A news photographer without emotion is, to us, just a button pusher.

Like our American counterparts, we also have our beefs. We carp about not having comfortable jobs with regular hours, and about never knowing when we are on or off duty. We lie awake nights planning a new angle for the next day's story; the next day we are shifted to an altogether different story. We fret about our camera equipment, adding gadgets, worrying about fogging slides, testing flash outfits and cussing the flashbulbs that didn't work. When it comes to cussing flashbulbs, we probably have an edge on American photographers. Our supply is both less plentiful and less reliable than yours.

The most frustrating thing in the life of a British news photographer is exactly the same thing that frustrates American cameramen—lack of recognition. For

too many years, British newspaper executives have regarded the news photographer as a sort of country cousin who tags along behind the reporter. The writer was the workhorse, the photographer an inarticulate entity taken along for the ride.

Now the picture is changing. The news photographer in England is beginning to receive the recognition that has been long overdue. I have noticed the same kind of development in American news photography. I believe that the treatment of pictures by *Life* magazine has provided a major step forward. Picture credits (the line under the photograph) stimulates the competitive spirit among photographers, but more than that it encourages a photographer to search out the feature angle of a story as something distinct from the "straight" news approach.

In the picture of the Chelsea Pensioners, for example, my aim was not simply to picture the fact that

*Continued on page 100*

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# THE ABUNDANT LIFE OF THE OVERFLOW



"One day," says Robert C. Florian, of Chicago, "I took a picture of an ash can, to use as a test shot. After I developed it, I discovered it had a new meaning. In fact, it looked drunk."

"Ash cans," he says, "loan themselves agreeably to

photographic treatment. There are fat ones, little ones, sly ones, poor ones, lonely ones, rich ones behind the protection of fences, crippled ones, wooden ones, some with funny hats, clowns, gangs of bad ones, married couples, entire families of father, mother and child,

but each

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*My own personal can*



*How do you like my sister's big old?*



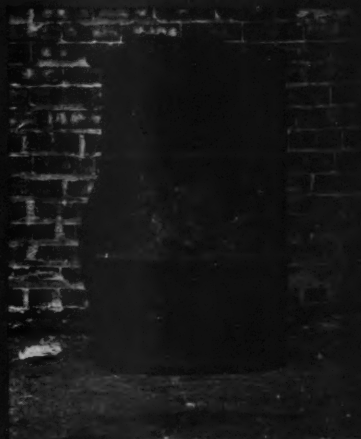
*The president's ash can*



*Let me out of here!*



*I just don't want that fellow*



*Thanks you*

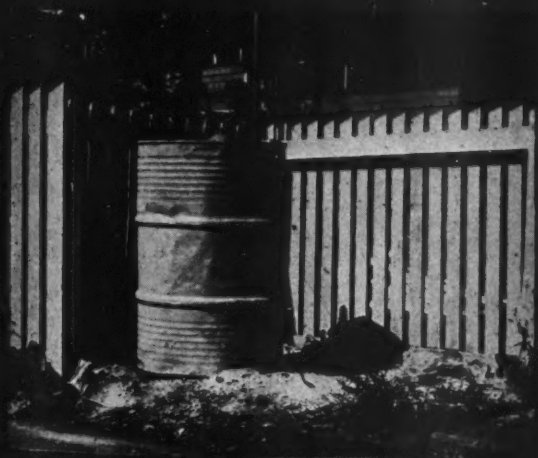
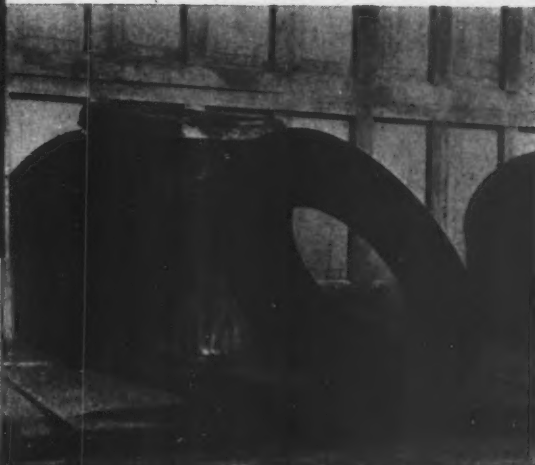


by ROBERT C. FLORIAN

## FLOWING ASH CAN

but each with a personality of its own."

To a photographer who has an introspective eye, many common everyday things like flowerpots, door knobs, paint buckets, and fences have individual personalities which reflect their surroundings.



# ektacolor

*Eastman's new color  
negative film can be processed  
quickly at home*

by ROBERT FARR

Color processing and printing has been an unrealized horizon for most people. With the introduction of Ektacolor and Pan Matrix films by Eastman Kodak, a few weeks ago, the advanced amateur photographer was brought closer to realizing the fun and satisfaction that come from performing every step of the color process, from composing the picture on the ground glass to hanging the final enlarged color print on the wall.

The two new products save considerable time by eliminating many steps in conventional color technique. An experienced hobbyist can make a portrait of his wife on Ektacolor film after dinner, and have the full-color print ready for mounting before bedtime.

The new Ektacolor film simplifies the making of color prints by eliminating the need for masking and for color separation negatives. Its companion product, Pan Matrix film, permits positive color printing matrices to be made directly from Ektacolor transparencies by either contact printing or enlarging through filters, without any intermediate steps.

The cost of the new materials is comparable with that of other photographic color products. Available, at present, only in cut film sizes ranging from 4x5" to 8x10", Ektacolor costs 88 cents per negative in the smallest size, and \$2.95 per negative in the largest, in 10-sheet packages. Pan Matrix film is available in six sizes, ranging from 6½x8½" (for 5x7" or smaller prints) costing \$4.45 to 16½x21½" priced at \$25.60 (for 10 sheets).

Required accessory items are less costly. Dye Transfer Paper ranges in price from \$1.80 for a package of 25 sheets, size 8x10" to \$4.40 for a package of 10 sheets, size 20x24 inches. The processing kit for Ektacolor is priced at \$5.00 for the 1 gallon size, and includes color developer, stop bath, hardener and fixer, and bleach. Pan Matrix film developer and stop bath costs \$3.30. The dyes and related items will cost about \$11.00.

All materials needed to make ten 16x20" enlargements from 4x5" Ektacolor negatives by this new process will cost the photographer approximately

\$35.00, assuming that he already has the necessary processing equipment.

The outstanding feature of Ektacolor film is the incorporation of *colored couplers* in the emulsion layers. By providing, in the original film, automatic masking for color correction, these couplers make color prints of high quality possible without the time-consuming procedures of masking which are required for best results in prints made from positive color transparencies.

Ektacolor, like other subtractive color films, has three emulsion layers. An exposure takes a picture by blue light on the top layer, by green light in the middle layer, and by red light in the bottom layer. Since colored couplers are already built into the film, a single color developer develops the three emulsions to

THE PRODUCTION of color prints from Ektacolor film begins with the exposure. A gray card is included in the negative area—but out of the final print area—as a reference point for determining the printing ratios for the separation matrices to be made with Pan Matrix film later in the process.



form negative dye. Each the process expose the colors of t

The process produces separation range.

The material photograph of grain v enlarging fi produces crisp, clear Ektacolor

## Exposure

As with color is lo any came though pr light, it lamps, or cannot be tungsten quired to ative whe recommen packaged

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In com record as white film dense sha details w

form negative images in yellow, magenta, and cyan dye. Each dye image controls the transmission through the processed film of the primary color of light used to expose that layer and is complementary to one of the colors of the subject.

The proper exposure and development of Ektacolor produces in a single negative a color-corrected set of separation negatives, balanced in contrast and density range.

The main criticism of Ektacolor, by a number of photographers who have tried it out, is the presence of grain which affects the texture of the prints in enlarging five times or more. While grain sometimes produces a desirable effect, it is a hazard to making crisp, clear color pictures. The problem of grain in Ektacolor is about the same as it is in Kodacolor.

#### **Exposure and Lighting**

As with positive color transparency materials, Ektacolor is loaded into a cut film holder and exposed in any camera equipped with a color-corrected lens. Although primarily made for use with 3200°K artificial light, it may also be exposed with daylight, flash lamps, or speed flash tubes. Mercury vapor lamps cannot be used. Balanced for exposure with 3200°K tungsten filament lamps, compensating filters are required to prevent change in color balance in the negative when exposed with another light source. Filter recommendations are listed on an exposure data card packaged with the film.

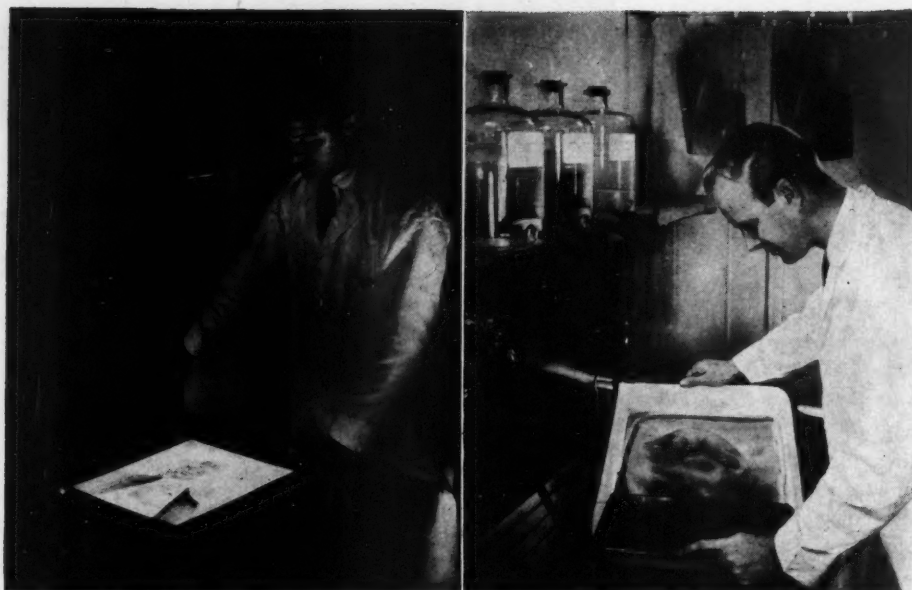
Care should be taken when diffusers or special reflectors are used in lighting the subject. They may change the color of the light. Unless a special effect is desired, light sources having different color qualities should not be mixed. It is particularly important to avoid green condenser lenses in spotlights and lighting a subject partly by artificial light and partly by daylight.

In common with all color films, Ektacolor will not record as great brightness ranges as will black-and-white film. Therefore, if a subject has highlights and dense shadows, the photographer must expose so that details will be seen either in the shadows or in the



THE FOUR solutions used in processing Ektacolor film are in use above. Tank developing is recommended, although tray developing is possible, with agitation. Pan matrix film is pre-punched for use with the vacuum registration board (lower photo) in the printing of Ektacolor film. The holes will insure perfect registry in making the dye transfer prints.





**MATRICES** for printing are produced by exposing the new film through the three color separation filters (left). Enlarging or contact printing methods may be used.

**AFTER EXPOSURE**, the Pan Matrix films are developed (right) in a special developing process to bring out the images in relief.

highlights. Ektacolor will not record both. Best results can usually be obtained by "flat" lighting—i.e., light that comes from the rear of the camera—to eliminate heavy shadows.

In making the first exhibition Ektacolor photos, Eastman photographers achieved excellent results by placing one light close to the camera and another light of equal strength at the same distance from the subject but at a 45° angle to a line between camera and subject. The areas illuminated by both lamps received two units of light, while the areas illuminated only by the camera light received only one unit. This is a lighting ratio of 2 to 1. In general, the ratio of modeling illumination to fill-in illumination should not be greater than 3 to 1.

An exposure meter is a handy means of checking the lighting ratio, especially where several lights are involved. By placing a neutral gray card in front of the subject, one reading is taken from the card with all lights turned on. This is the maximum reading. A

second reading is then taken from the card with only the light or lights at camera position turned on. From these two readings, the lighting ratio can be quickly determined.

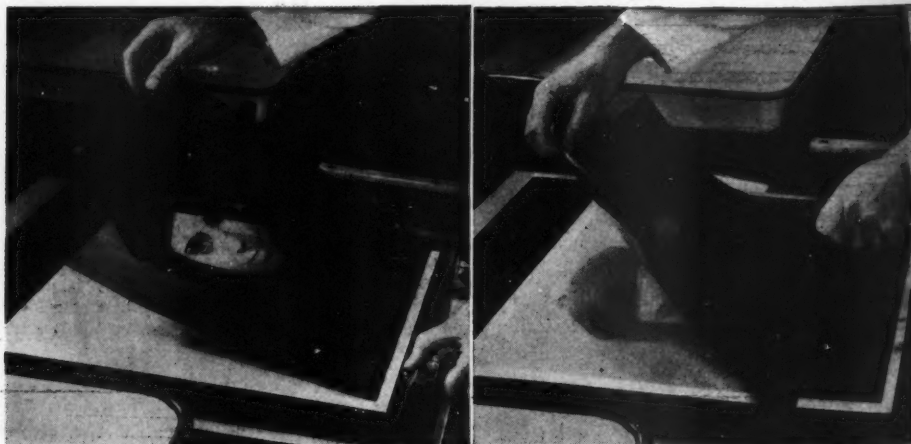
Ektacolor film has a slightly greater exposure latitude than Kodachrome. For best results, correct exposure is necessary. Based on an exposure time of one-half second, the exposure index values (American Standard Exposure Index) are:

	Tungsten 8	Daylight 5
For meters requiring Weston ratings and for older GE meters, these settings are recommended:		

Weston	Tungsten 6	Daynight 4
GE	Tungsten 10	Daynight 6

Exposures slightly greater than recommended, will produce satisfactory negatives. However, less exposure should not be given since colors become degraded and shadows show less detail. Any meter reading on daylight illuminated subjects that indicates less exposure than 1/50th sec-

**FOLLOWING DEVELOPMENT** and a dye bath, the first step of printing (below, left) begins with the transfer of the dye image to the paper. Subsequent dye images produced with the Pan Matrix film matrices are transferred to the paper (below, right) using a large print roller, to complete the print.





COLOR PRINTS made by the dye-transfer method, as used in printing from Ektacolor, have an open and airy feeling. Shadow details are not dark blobs but appear subdued with a color range of their own. Photo by Harold Lambert.

ond at F:8 should be disregarded, since underexposure is sure to result.

As a help in determining the exposures required in making the matrices on Pan Matrix film from Ektacolor negatives, a neutral gray card having a reflectance of about 18% should be photographed with the subject. It should be placed along the edge of the scene area in such a position that it receives full subject lighting but can be trimmed off the final prints. The photographer should avoid placing it near colored objects which would reflect light on it.

A handy type of card to use is the Kodak Neutral Test Card, which has a gray side of 18% reflectance and a white side of 90% reflectance. It costs \$1.00.

The best way to get acquainted with Ektacolor film is to shoot a package of negatives at several average scenes, varying the exposure and lens opening, and

keeping a track of exposure conditions. When the films are processed, the photographer can see which of the combinations of his own lens openings and shutter speeds produce the best results.

### Processing

The developing of Ektacolor is fundamentally a simple process and little challenge to the skill of the photographer who has had some good experience with black-and-white negative development. Orderly work habits are important. They not only reduce time required by eliminating unnecessary motion, but are also less likely to produce faulty work. The wall chart summary of processing steps, included with Ektacolor developing chemicals, should be studied and followed.

All of the steps necessary to processing Ektacolor,

*Continued on page 114*



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# New ways to use *FLASH*

The photographer filled the pan of his flashpowder gun, looked down at the crowd in the street below, shook his head, pulled the cork of the bottle with his teeth, poured all the remaining powder into the long flash tray.

He carefully removed the cap from the lens, leaned forward expectantly, tripped the lighter flint with his finger. A blinding flash, an explosive roar, a rising cloud of yellow-white smoke and the picture was made. That was flash photography two decades ago. But what about the photographer? Blinded by the flame and smoke, his eyebrows singed, his face sulphur-yellow and powder-burned, he was trying to decide whether it was worth the trouble.

Today some discriminating photographers place flash in the category of flash powder. They consider it an emergency lighting medium for documentation, rather than the adaptable tool that it can be.

I believe that flash is often misused, and is therefore condemned by many as a makeshift or emergency device rather than as a flexible light. There are many new and unusual uses that the inventive photographer can make of it.

For instance, did you ever use light sources of varied color temperatures when shooting color? Film manufacturers say "Don't!" but it is done deliberately every day by top color photographers. The warm tones are warm, the cold tones are cold, and it all adds up to intelligent use of light for specific purposes. How is it done? Daylight color film is used on a synchro-sunlight shot of, say, an airplane. Shadow areas are lighted with blue flashbulbs. A clear flashbulb, its light channelled through a paper "snoot," or aimed in a narrow reflector, is thrown at a live subject to add warmth to the transparency. The same "gimmick" can be used wherever contrasting tones are desired, or where cold-tone reflection makes it necessary to add warmth to a live subject. The procedure is frequently reversed and a blue bulb used in the reflector when there is a tendency toward too much "warmth." The critical factor is light control.

FOR SPONTANEOUS action shots in color, like the one on the opposite page by *Tana Hoban*, you'll need flash to give you plenty of light. For data and lighting diagram on this Kodachrome (type B) transparency see page 118. The outdoor flashbulb shot at the right was made by *John Dominis* with a single flash on an extension high in the tree. Because a park light is included in the picture we get the impression that this is the source of light for the photograph.

by DON M. PAUL





COMPONENTS, left, for a practical flash extension are inexpensive and easily found. Reflector comes from a 1928 Ford, and was purchased from an auto wrecker for ten cents. Clamp, midget bulb adapter, wire, socket and plug from any electrical store make up the other necessary parts. Right, the assembled flash extension. Adapter is soldered into the reflector. Reflector-adapter unit is then screwed into socket. This reflector will spread the light evenly.

Speaking of airplanes, did you ever shoot a grounded plane at night, its cockpit and pilot brightly lighted from the interior with a flashbulb on an extension? Photographed from outside the plane, the effect is dramatic. In a large blister, the light should be placed on the dash, or forward on the floor, aiming at the pilot. The result almost simulates a plane in flight, particularly if the pilot is in full regalia, and looks tense and attentive.

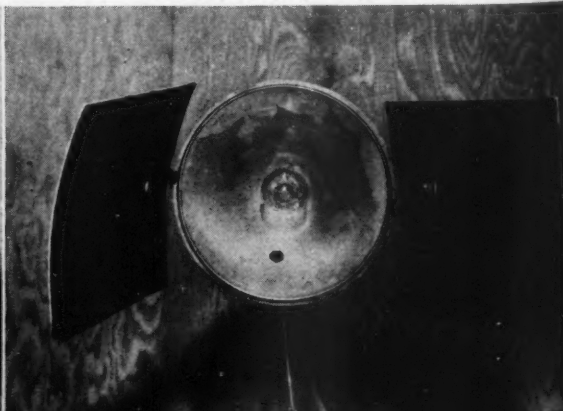
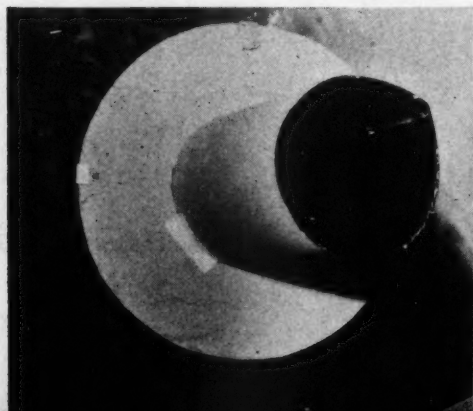
Do you remove your flashgun from your camera and hold it high and to the side on all your flash shots to balance the intensity of the light? Or do you, like countless others, get harsh, chalky effects, burnt-up highlights, hotspots and garish shadows because the flashgun stays coupled to the camera?

Do you, when making portraits with flash, move the subject his height away from the wall, and hold your gun high and to the side? Or do you push the button and hope the film will do the rest?

Modelling is necessary in flash, as with any other light medium. Ignoring factors of light placement is a serious error in flash photography, and the finished result usually indicates negligence. If a subject is moved his height from the wall, a raised flashgun will lower the shadow on the wall to a point where it is hardly noticeable.

Here is what Skippy Adelman, a New York press photographer whose flash pictures show fine modelling even in high-speed newspaper printing, has to say on the subject:

AN EFFECTIVE snoot, left, can be made from two pieces of cardboard and painted black inside. It is held to the reflector by tape. Barndoors, right, can be made for any flash reflector. Not fancy, perhaps, but they direct light where it is wanted. These are made of stiff cardboard and have bent paper-clip hinges which are taped to the cardboard. The wire fits into metal loops, which are soldered to the edge of the reflector. *Photos on this page by Don Paul.*



"Almost away the to the can bulb or w from a sid ject matte  
"I've tal even in c lighting. T result the darkroom printing c poor; the much as t no contra  
"To get gun so th the backg nearer, fo effect of sources."

"Almost as soon as I started using flash I threw away the bracket that attaches the gun and reflector to the camera. Whether I am shooting with one flashbulb or with several, I like to have the light coming in from a side direction. This gives roundness to the subject matter.

"I've taken pains to obtain flash negatives that are even in contrast and in foreground and background lighting. Too few amateurs bother to do this and as a result they have to spend many painful hours in the darkroom doing dodging and burning-in during their printing operation. Even then their results may be poor; their foreground objects are overexposed so much as to block-up, and the background objects have no contrast.

"To get good negatives with single flash I angle the gun so that the flash's hot spot (the center) falls on the background objects and the soft edge falls on the nearer, foreground figure. This gives the picture the effect of seeming to be made with two separate light sources. The background figure is front-lit and the

foreground figure is side-lit."

Continuing, Adelman points out how he uses multiple flash. "I generally move the extension flash back far enough so that its light value on the background object is the same as the mainlight on the foreground subject. If the foreground and the background objects are close enough together both lights can perform a double function. The extension light, used primarily as a  $\frac{1}{2}$  light for the background, can also be used as a sidelight for the foreground. The frontlight, used as a  $\frac{1}{2}$  mainlight for the foreground can be used as a fill-in for the background."

To get the most out of flash bulbs you need the right kind of equipment; much of it you can make or improvise yourself.

A #2 flood reflector, which is used by many amateurs, makes a poor "fill" light. It spreads too much. It usually hotspots. It is designed for a larger point source than a small flashbulb. A better bet for "fills," or "catches," or backlights, is a salvaged old-style auto-headlight reflector adapted to midgets. I have

THIS IS an example of Skippy Adelman's two flash technique as applied to a news shot. A flashbulb held high to the right of the camera provides main light for all of the characters. Another smaller flashbulb to the left of the camera provides the fill light. The lighting was evenly balanced and no dodging was necessary.





some for which I paid a dime apiece. They had to be revamped for use, but serve adequately. I also have some excellent flash extensions made by synchronizer manufacturers, but each of my extensions serves a purpose.

Your regular flashgun reflector is fine for a "key light" since it was designed for most efficient output.

It may have limitations which you can correct. After all, manufacturers standardize equipment to serve the greatest number of people. With a few "gismos" of your own making, you can quickly be in business.

Barndoors placed on the sides of your "key" reflector permit area control. They can be made of cardboard taped to the sides. If you want a fancy job, they





LEFT, LOUIS ARMSTRONG listens to Jack Teagarden. Skippy Adelman made this picture with one flash bulb by aiming the center part of the reflector at Teagarden, who was 8 feet from the camera; this gave a front lighting effect. Armstrong was in the less intense light from the side of the reflector. Here the light had a side-lighting effect. ABOVE, *Weegee's* Bowery shot, "Portrait of a Lady," was made with one flash bulb at the camera. RIGHT, the hard, simple lighting of a single flash bulb held high was appropriate for this shot of jazz-musician Stan Stewart by Skippy Adelman.

can be made of metal, and hinged.

A "snoot" can funnel a narrow shaft of light from your flash reflector for extreme spot effects: A piece of cardboard, rolled into a tube and taped to the reflector is perfectly adequate so long as it fits flush and covers the flashbulb entirely.

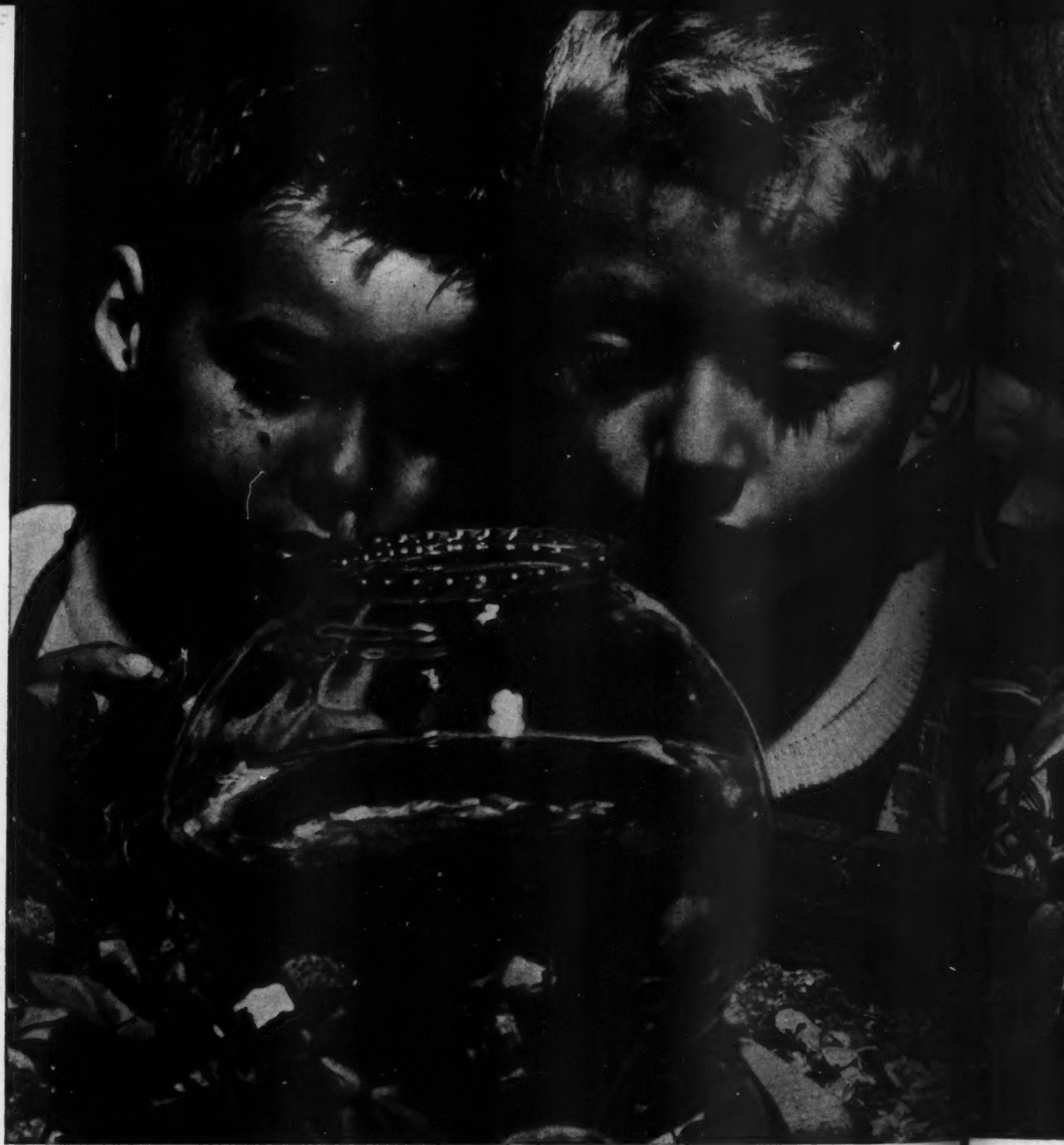
A small wood or cardboard box, set on a tripod, fitted with sockets and lined with crumpled tinfoil can act as a "broad." The advantage is the rectangular area limitation and its reflective intensity. If you want to pilot your flash, follow the lead of Frank Powolny, portrait photographer at 20th-Century Fox studios, and put a projection lamp in your "broad," with an on-off switch controlling the pilot. Frank's photo gallery equipment for flash is designed and constructed by him, and allows precise highlight and shadow planning with pilot lights. When he is ready for his shot he douses the pilots and trips the flashbulbs synchronously.

Do you begrudge the cost of multiple flash? Then do with one flashbulb what would ordinarily require three. Use reflectors.

A circular, magnifying shaving mirror, which you can buy in most drug stores for a nominal price, can reflect enough light to act as a "catch-light" on the hair. Since light travels 186,000 miles per second, the short duration of the key flashbulb will be picked up if the mirror receives some of its direct light. The ratio of reflected light intensity will, of course, be determined by the distance between the flashbulb and the mirror. The greater the distance, naturally, the less the intensity.

Silvered reflectors, ferrottype tins, even cardboard mounts can act as "fills." Here, particularly, distance from key bulb is a major factor in light intensity, as is the degree of reflectivity of the reflector.





Direct light sources are subject to greater control, and are therefore preferable to reflectors, but practice will soon make utility and economy evident when reflectors are used with flash. The professional photographer usually uses a barrage of flashbulbs, and does not resort to makeshifts, but he can afford it. He standardizes his procedures, learns lighting blueprints by heart, gets a maximum return with a minimum loss of film, and a price that justifies the cost.

I don't mean that professionals are giving up their Juniors, Seniors, Floods and Inkies. But many find advantages in flash that make a Press 40 preferable to an incandescent. There are numerous reasons for this.

Shutter speeds commonly used with flash eliminate subject-movement hazards. Flash permits great depth of field, thus more crispness, more sharpness, no undesired "out of focus" effects. With flash there is no worry over melted makeup, perspiration, squints,

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painful expressions. Result—a greater percentage of usable film, a lesser percentage of culls. With babies, who squirm and wiggle, flash is usually a “must.”

Did you ever photograph an outdoor scene that lacked just the right touch of drama? Possibly you used a foreground tree as a frame, or as a “lone sentinel.” Yet the tree itself didn’t register. It got lost in the scenery. Next time, try a flashbulb on the tree. How? Expose normally for the landscape, stopping

ESTHER BUBLEY used one flash held high for this well-rounded lighting. Notice that the rocks and white collars reflected enough light to keep the shadows from giving a too heavy and dramatic an effect on the boys’ faces.

down and using a long exposure. While the shutter is open, flash a bulb at the tree.

One of the tough problems with flash is to illuminate a large room uniformly. Next time try flashing your bulb at the ceiling, instead of head-on into the room. If the ceiling is light in color and highly reflective, you will lose 30% to 40% of your light, but uniform coverage justifies the loss. If the ceiling is dark, or highly absorbent, your light loss will climb to as high as 70% and the guide number or flash factor should be adjusted accordingly. Open flash and a larger flashbulb will give you adequate depth of field, and your ceiling will be the largest reflector you have ever used.

Your fireplace is always good for an interesting effect. A flashbulb on extension, placed in the fireplace and aiming out at the assembled group will give you an interesting silhouette. Make certain that one of the group completely blocks off the direct light so that it does not hit the lens. If you want soft foreground detail rather than a bold silhouette, flash a small bulb at the group from the camera.

To retain the “feel” of normal room lighting, try placing your flashbulb in a table or floorlamp with a thin, light lampshade. Lead the cord of the lamp to your flashgun, plug in and fire in the usual manner. Place the lamp so that the foreground is well lighted. A bulb at the camera is usually unnecessary and can spoil the mood.

You have undoubtedly seen the lighting effect known in movie studios as the “cathedral gimmick” used many times, and wondered how to duplicate it. Obviously you cannot wait for the sun to be just right so it will cast long rays of light into a room. If you are using a north or south angle, you’ll have a long wait for a direct ray from a sunrise or sunset. But flash? That’s the gimmick! Place your subject in an armchair near a window. Run a long extension outside, set it on a stand or tripod aiming into the window. With your camera set up indoors, flash the light through the window onto the subject. Expose on the basis of distance from the light to the subject—never on the basis of distance between the camera and subject. Turn your subject so that the light gives full coverage. If you cannot do that, avoid extreme shadows by using a reflector or a small, diffused flashbulb at the camera. Remember though that the light coming through the window should be brighter than any fill light used inside the room. Several types of shots can be made this way. If you expose for the window light, the room will go dark. If you expose for the “fill,” the window light will actually be a shaft of

*Continued on page 117*

# FIGURE IN

M

*A representative modern German's work  
shows sensitivity and technical excellence*



# MOTION



Georg Gesell's happy marriage of nature and the human figure is typical of the work of a group of modern German photographers. This photograph was first published in *Photo Magazin*, the exciting new magazine edited in Munich by Bernd Lohse.

Instead of posing the model on the sand or coyly against a tree, Gesell has draped her naturally with the crystal-clear water of a mountain stream, using afternoon sunlight for illumination. The swift-flowing stream has given an interesting diffusion to the figure and projected motion into the entire composition.

In his data on the picture it is worth noting that a 75mm Tessar was softened by the use of a Duto O auxiliary lens and a green filter was used with pan film. The camera was a Spiegel-reflex 6x6. A slow shutter speed (1/25th second) was used so that the movement of the water would not be "frozen."

**"ERFRISCHEDES BAD"**

*by Georg Gesell*



# PENDULUM PATTERNS

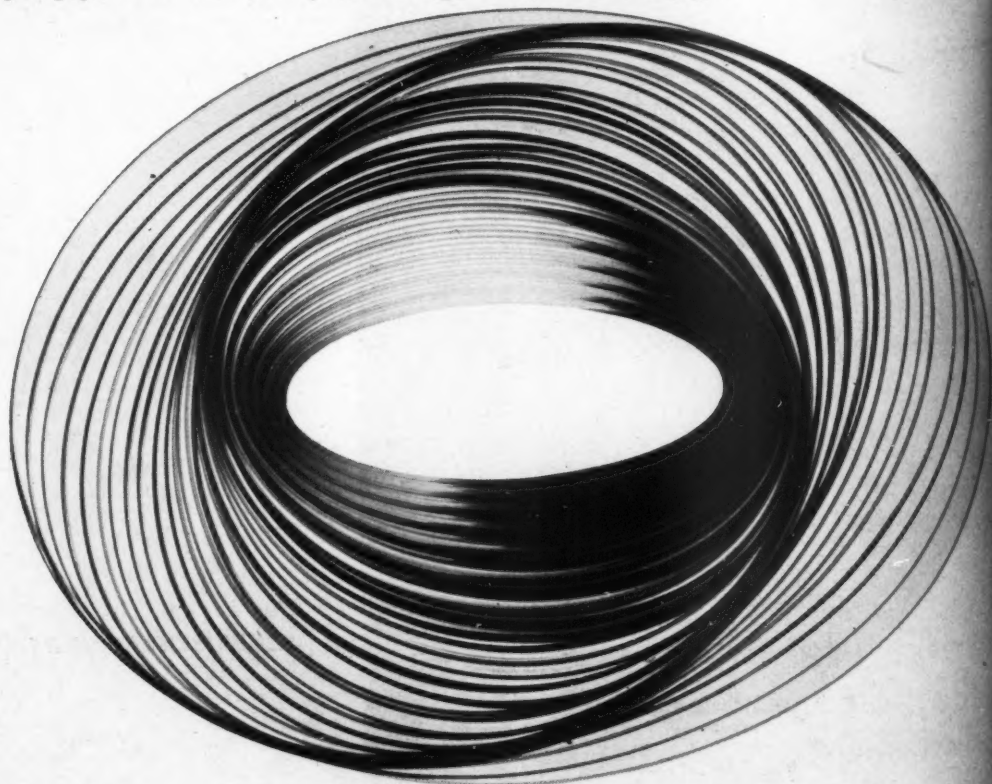
Mystics and physicists in the past have tried to show that all nature could be reduced to a series of vibrations. For their pains have come such modern conveniences as the electric light, color film, the radio, and a full line of musical instruments, culminating in the electronic organ.

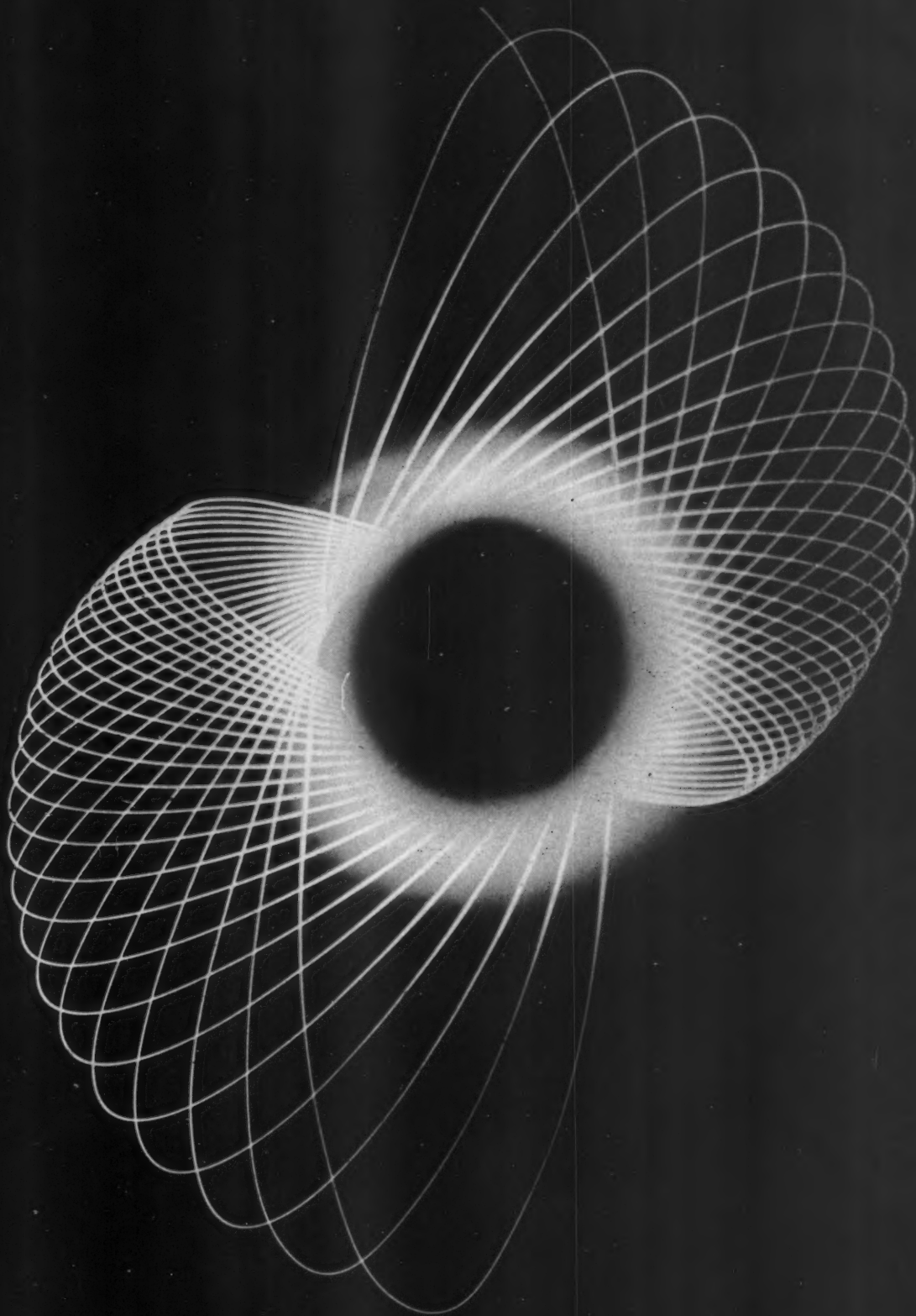
We are all familiar with the vibrations that are given to the air which we call tones or sounds. Less familiar are the vibrations translated into a form which we can see. Forms which we now call "Pendulum Patterns" have been known since 1847, as Lissajous figures. The first of these vibration drawings were made by physicists with a pendulum to which had been attached a capsule of sand having a very small opening in the bottom. When this pendulum was set in motion over a piece of white paper the sand traced the motion of the pendulum vibrations.

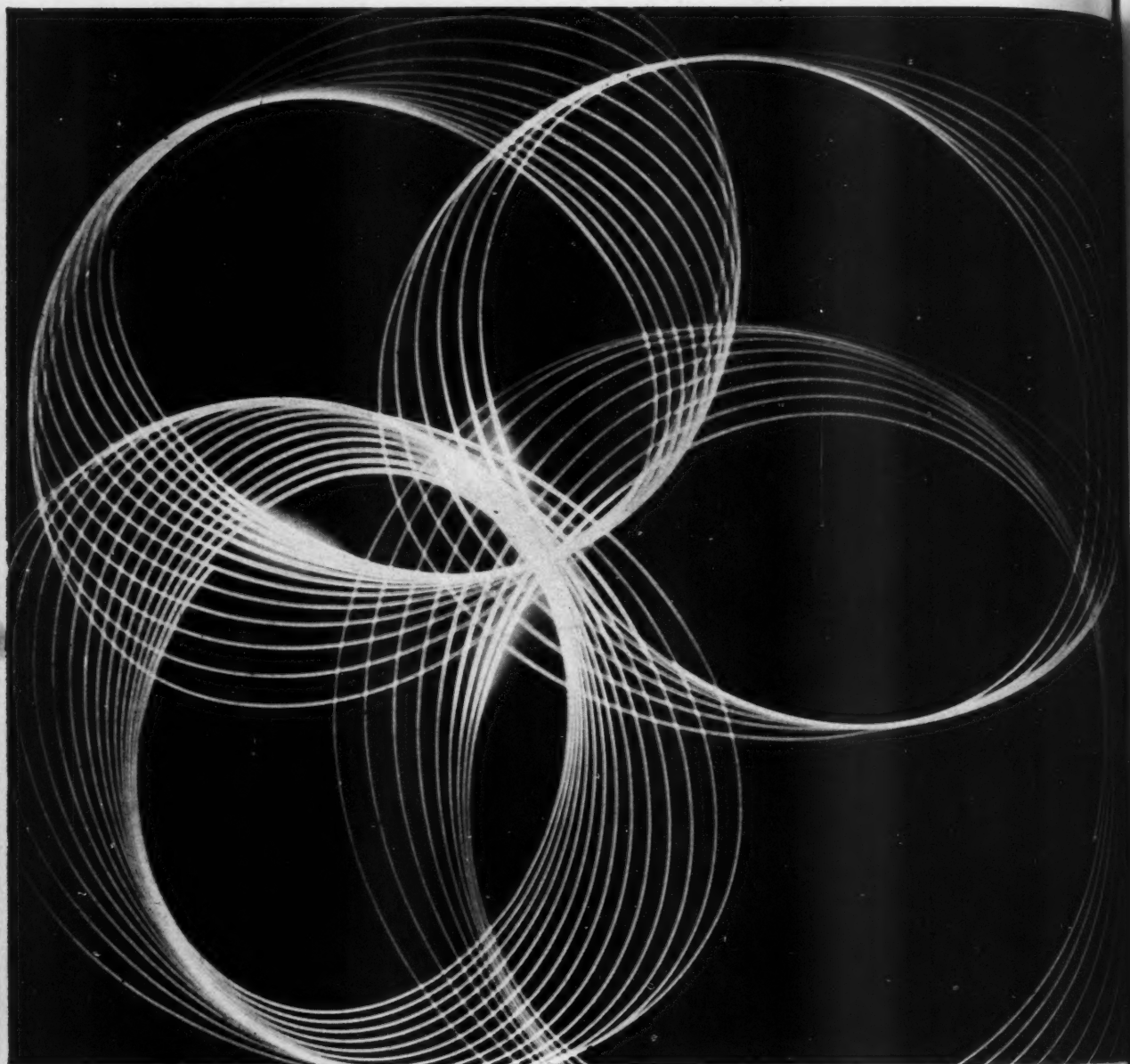
If the pendulum is coupled to a second string directly or through a universal joint, the path of the escaping sand takes on beautiful and complex variations.

Any number of pendulums can be connected to each other and the infinite number of variations on the theme of motion tempt us to see fantastic stars,

ON THESE PAGES and the following ones are a series of pendulum pattern pictures by Donald Nusbaum of the *Milwaukee Journal*. Literally, these are photographs of vibrations. For a picture showing how they are made see page 75.



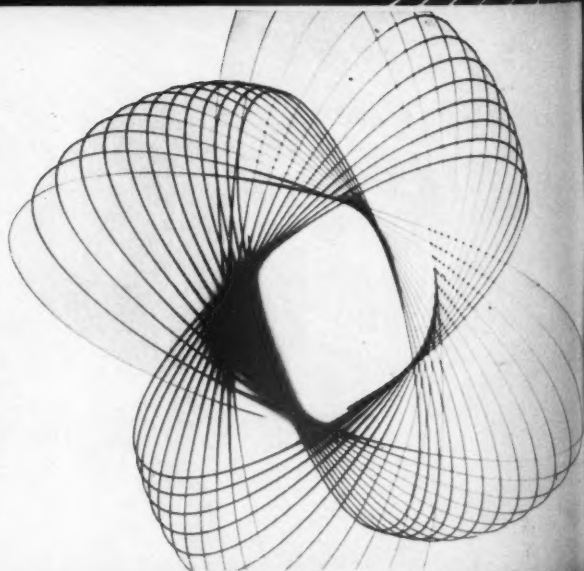




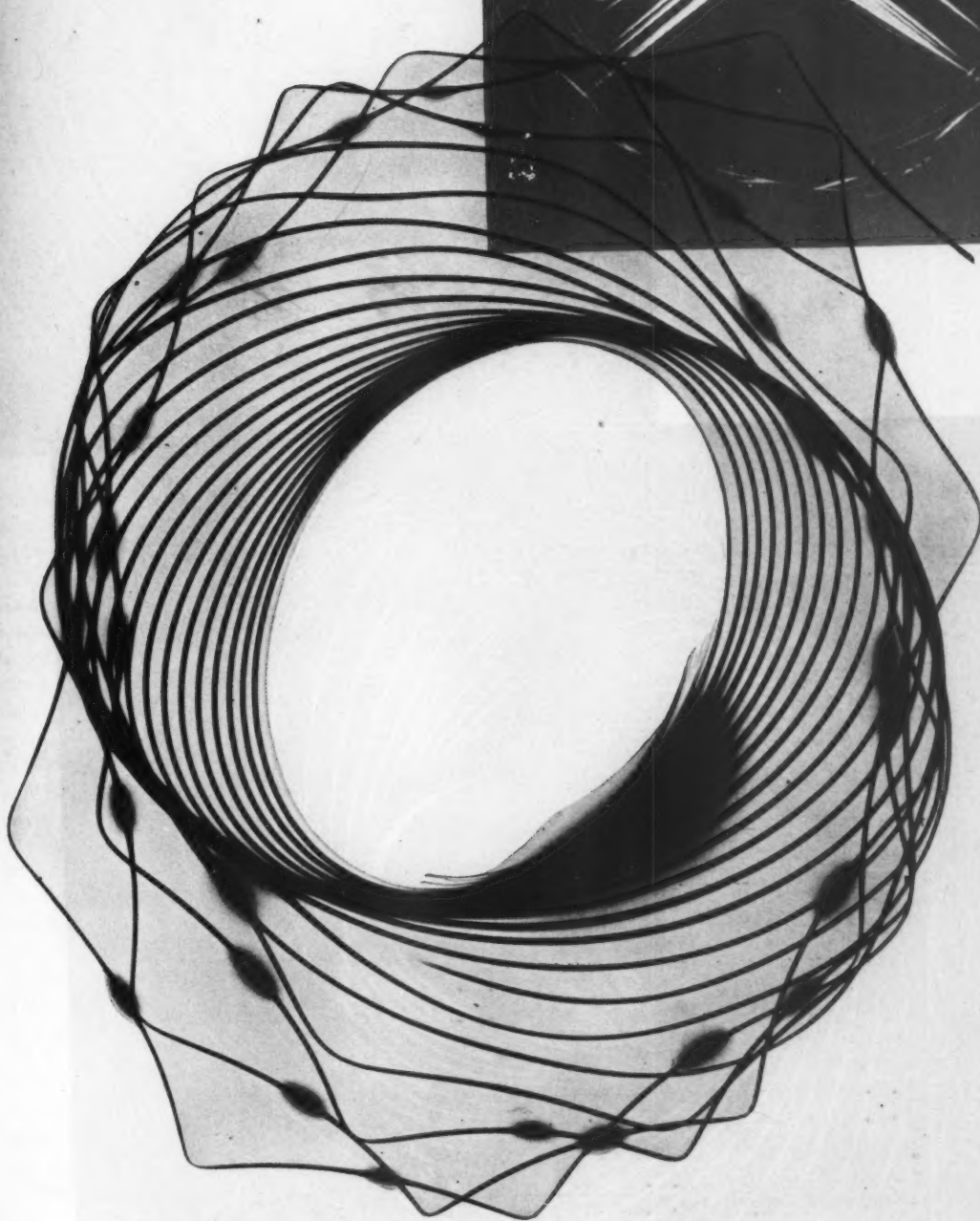
animals, birds, lace, and sparkling gems in the recorded patterns.

Since recording these motions in sand has an impermanent quality there have developed a number of more hardy methods. In 1946 the Swiss magazine *Graphis* devoted a section to the work of the Zurich Professor Alfred Gysi, who developed a method of providing the pendulums with pens so that they could trace their own oscillations. The patterns which are drawn by this attachment are crisp and jewel-like.

More recently photographers have discovered that their lens and film is a ready-made recording device for these oscillations. All that is needed is to attach a light to the pendulum and focus the camera on it









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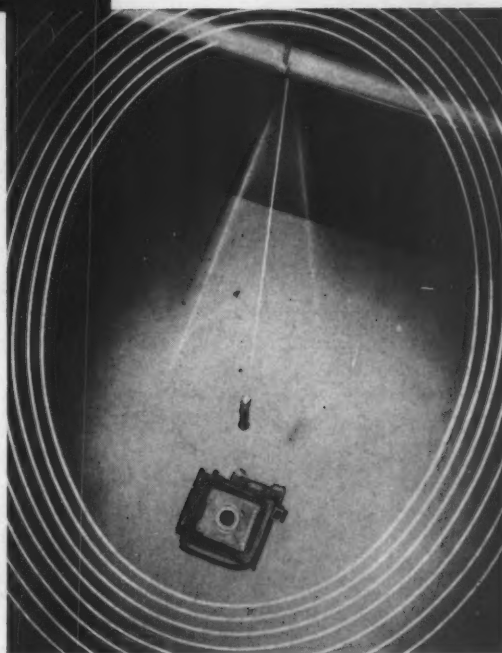
from below. Don Nusbaum of the *Milwaukee Journal*, who made the patterns shown here, describes his method of making them as follows:

"I used a penlight flashlight which was suspended from the ceiling; the camera was placed on the floor below, focused properly to bring the light source into focus. The bulb on the penlight must be taped to cut down the light to a pin-point. The distance between the light and the camera was varied between five and seven feet which gave a variety of patterns. A stop of F:8 was used on a 5¼-inch lens with medium speed pan film when the batteries were fresh. As the batteries became weaker the aperture was increased. The length of exposure depended on the size of the arc of the penlight. Care must be taken to prevent the light from falling directly on the lens, or a halo will develop which may block out the entire pattern. The best advice that I can give anyone who wants to try pendulum patterns is to begin for yourself. There is no limit to the number of methods of experimental use. You can throw your camera in and out of focus; you can move the camera; there aren't any rules; you can shoot the works."

Nusbaum's method of setting up the camera and pendulum is shown in an impressionistic picture at the right.

Pendulum patterns recorded on color film are new

*Continued on page 127*



THE SIMPLE photographic set-up that Donald Nusbaum used to make his pendulum pattern pictures. The flashlight was suspended above the camera and then set in motion. A typical pendulum pattern is used to frame the picture, giving a "cause and effect" impression in this montage shot.





ONE of the nicest things about speedlight is its soft, penetrating quality of light which works equally as well for either main light or fill light purposes. The picture on page 81 was made with a speedlight serving as the main light; for the above picture the speedlight was used as a fill light. Notice how even the deepest shadows are luminous, and how the highlights in the horse's eye liven up the picture. An exposure of 1/50 sec. at F:16 on Ansco Supreme film was used by A. Henninger in making this shot. The picture across the page shows one of the new Anglo flash-kit units in use. Either one or two flashtubes can be used with this battery unit.

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*With this battery  
powered unit the  
photographer makes the  
final assembly himself*



## NEW SPEEDLIGHT KIT

A few years ago the photographic world was excited by the speedlight pictures that came from experimental laboratories. More recently, professionals were able to add speedlight equipment to their outfits at a cost of several hundred dollars. Now the Amglo Corporation of Chicago has been able to put a speedlight kit together that will sell for around \$100 because the purchaser does the simple parts of the assembly work himself. This means that the magic of speedlight is within reach of many amateurs who couldn't afford speedlights before.

The Amglo Flash-Kit can be synchronized to practically any camera having a flashgun and solenoid, a flash shutter and flash gun, or a flash shutter only. Cameras having focal plane shutters can usually be synchronized at the slower speeds where the curtain opening is the full size of the film (generally at speeds up to 1/20 or 1/30 second). It can also be used, of course, for open-flash exposures with all focal plane shutters having provisions for time or bulb.

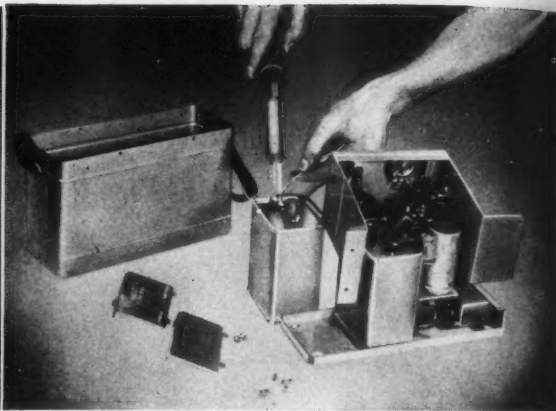
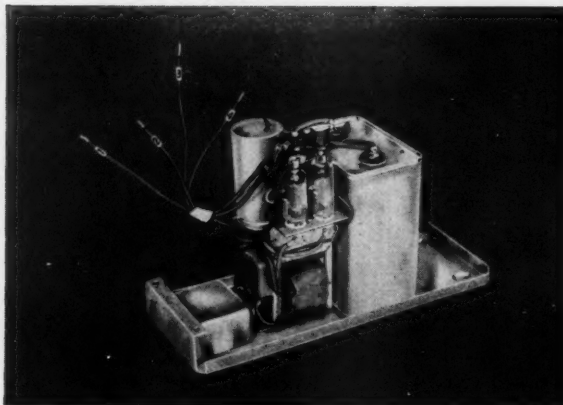
Perhaps the nicest constructional feature about the Flash-Kit is the way in which all difficult wiring problems are handled at the factory. The power supply and its associated rectifying and voltage doubling portions of the circuit are completed and pre-tested at the factory. Aside from "bolts and nuts" work, all of importance that remains is to solder the six wires (already stripped and tinned) connecting the panel and chassis assemblies. Each of these wires is numbered and corresponding numbers on the panel fixtures show where it is to be soldered. All parts come

with the kit, including the solder. Complete assembly requires about an hour and the only tools needed are a screwdriver and a soldering iron.

### *The Basic Kit*

The basic flash kit consists of an aluminum chassis assembly (10½ x 6½ x 4 inches in size), in which all major parts are already riveted in place and wired, as shown on page 78. An aluminum shelf mounted on the transformer supports a vibrator, rectifier tube sockets, and the relay. It also clamps in place one side of a condenser which provides 55 watt-seconds of electrical energy to the lamp circuit at each flash. The term "watt-seconds" indicates the amount of stored energy in a condenser and is a product of *voltage* and *capacitance*. If you aren't very clear about "watt-seconds" at this point, don't worry about it. We'll discuss them more fully later on.

Two small Willard wet plate batteries fit into a battery compartment at one end of the chassis, and plug into a socket mounted on a panel separating the batteries from the rest of the working parts. Extra plugs and wiring instructions complete the basic unit, and the total cost at this point is \$80.75. From here on, the purchaser buys only the cables, lamps, and special accessories needed for whatever type of camera flashing equipment he uses. The same kind of a lamp (the Amglo 5804X) is used in all hookups. It costs \$16.33 and is good for countless thousands of flashes. All other electrical accessories such as flashgun adapters, reflector combinations, etc., are completely wired and



THE WIRED chassis assembly, left, is shown exactly as the purchaser receives it. The four wires are stripped, tinned, and numbered, ready to be soldered to correspondingly numbered fixtures on the panel assembly. This is a single-condenser, 55 watt-second unit. In the righthand picture, the same chassis is shown from the opposite side with the wires soldered to the top panel assembly. In the background is the aluminum case the unit fits into. A second condenser is being added here to increase the power to 110 watt-seconds. A screwdriver and soldering iron are the only tools needed; even the solder comes with the kit.

ready to plug into the lamp sockets on the top panel of the unit.

#### ***How the Hook-up Is Made***

Cameras equipped with a *solenoid or mechanical tripper*, or with a *flashgun and flash shutter* can be used interchangeably with speedlight and flash by using the flashgun adapter with a ready-wired cord and plug costing \$3.80. (This price, of course, does not include the flash lamp itself.) The adapter which holds the Amglo lamp has a flashbulb base and can be inserted or removed from a flash gun battery case the same as a flashbulb.

It is not necessary to change the present sync adjustment on the flashgun because the Flash-Kit has a calibrated "sync" control that is easily adjusted to match the time delay of the shutter. In use, the adapter cable is plugged into the "main light" socket on flash-kit panel; then the sync switch is snapped to "flash gun" position. This permits the batteries in the flashgun to actuate the control relay in the Flash-Kit.

For cameras having *flash shutters but no flash gun*, a cable and plug is available for \$1.28. First the cable is spliced to the flash shutter cord, then the plug is inserted into the "sync socket" on the Flash-Kit panel. With this arrangement an extension light set is required. This extension unit, consisting of one 5804X flash tube and an Amglo Ultra Reflector comes ready-wired at a cost of \$27.73. The lamp and reflector can be mounted on the camera, or on a lamp stand at some distance from the camera, as desired. The switch on the Flash-Kit panel is snapped to "shutter" position. The speedlight batteries now operate the control relay when the shutter contacts close. This relay takes much less current than a flash bulb, so there is less chance of contact trouble than when using the same flash shutter with flash bulbs. With some flash shutters, es-

pecially those having a 5 millisecond contact adjustment, you can sync to higher shutter speeds with the relay controlled unit than is possible with flash bulbs.

With cameras that are not equipped with flash shutters, or with flashguns having solenoid or mechanical trippers, it is necessary to purchase either a solenoid tripper (which most camera repair shops will install at from \$10 to \$12), or to have shutter contacts installed. The exception to this, of course, is "open flash" work where synchronization is of no importance.

For *open flash* work the Flash-Kit can be used with any camera having Time or Bulb shutter settings. The same plug and cable used for flash shutters is required. Instead of connecting to shutter contacts, the end of the cable is wired to a push button switch which can be obtained from almost any hardware or electrical supply house for a few cents. The switch on the panel of the unit is snapped to "shutter" position so that the batteries and the speedlight unit close the control relay when the push button switch is closed.

#### ***How It Works***

The Flash-Kit unit is provided with two sockets, one marked "main light" and the other "ext. light." In the "main light" socket, two terminals go to the low voltage synchronizer circuit. The other two terminals, when the cable is plugged in, connect to the flash tube. The "ext. light" (extension light) socket has only two flash bulb terminals. When the appropriate cable is plugged, these connect to the 5804X self-ionizing lamp mounted in a specially designed reflector. These two lamps are connected in series, *not* in parallel. The reason for this is that when two lamps are connected in parallel, the energy is divided between them. When two lamps are connected in series, *all* the energy passes through both lamps with a consequent increase in light output. In fact, the light output would almost

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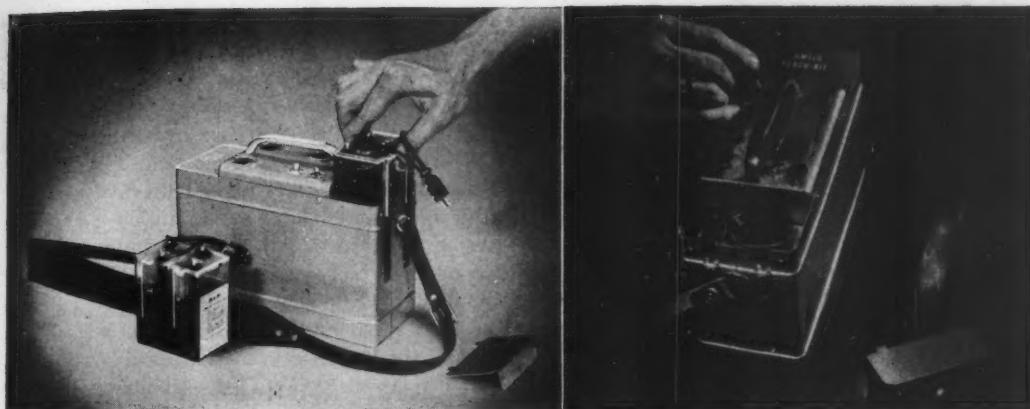
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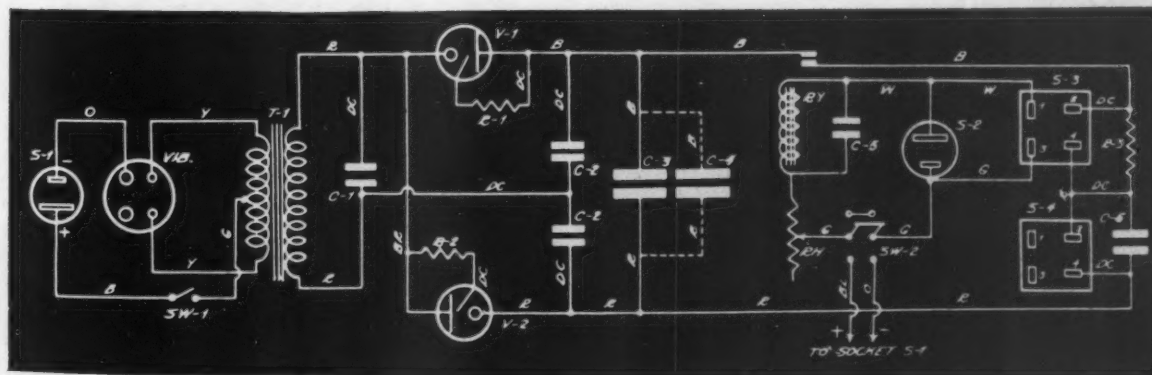


**LOWERING** a set of Willard storage batteries, above, into a finished unit. The batteries have indicating balls, visible when the unit is being used, to show the condition of the charge. The foreground batteries are an extra set; some photographers buy extras so that one set can be recharging while the other set is in use. The top panel of the unit, right, has plug-in sockets for two light cables. A calibrated "sync" adjustment and an "On-Off" switch are on the left side; a glow-viewing grid, a "Flashgun-Shutter" switch, and a "Sync-Shutter" outlet are on the right. The carrying case measures  $10\frac{1}{2} \times 6\frac{1}{2} \times 4$ " and weighs about 12 lbs.

**FOR THE TECHNICALLY MINDED — this is what goes into the Flash-Kit:**

- |                |   |                |   |
|----------------|---|----------------|---|
| C-1            | .0005 Mfd., 6000 V.D.C. Paper Condenser.                                | S-1            | Bat. Socket, 2-Prong Jones Skt. S-402-AB.                                       |
| C-2            | Gudeman Type X-541 Dual .75 Mfd., 1000 V.D.C. Condenser.                | S-2            | Sync. Socket, 2-Prong Jones Socket S-402-AB.                                    |
| C-3 }<br>C-4 } | Gudeman Type PFR-8491-2, 20 Mfd., 2500 V.D.C. Condensers.               | S-3            | Main Lite, 4-Prong Jones Socket S-404-AB.                                       |
| C-5            | Sprague 25 Mfd., 25 V.D.C. Dry Electrolytic Condenser.                  | S-4            | Ext. Lite, 4-Prong Jones Socket S-404-AB.                                       |
| C-6            | .0001 Mfd., 2500 V.D.C. Paper Condenser.                                | SW-1           | On-Off Switch.  |
| R-1 }<br>R-2 } | 10 Megohm $\frac{1}{2}$ -watt Resistor.                                 | SW-2           | Flashgun—Shutter Switch.  |
| R-3            | 250,000 Ohm $\frac{1}{2}$ -watt Resistor.                               | T-1            | Thordarson Vibrator Transformer No. 51918, 4-volt Primary, 1100 Volt Secondary. |
| RH             | 10 Ohm Wire Wound Rheostat, Sync. Adj.                                  | Vib            | Mallory Type W-659 Vibrator.  |
| RY             | Relay, SPST, 2-4 volt, 3 Ohm Winding with Mallory D54 Contact Material. | V-1 }<br>V-2 } | Raytheon CK 1013 Rectifiers.  |
|                |   |                | 2 Batteries, Willard, 2-volt Type ER-6-2B.                                      |

**THIS is how the Flash-Kit is wired.**



be doubled except for the added resistance of approximately five ohms of the additional lamp.

A circular screen grill on the right side of the chassis provides a way of telling when the unit is fully charged. The two cold cathode, rectifier tubes in the charging circuit are visible through this grill. When the unit is first turned on, these tubes ionize quite brightly. When a charge of approximately 1800 volts is obtained in the condensers, the tubes start flickering. After a second or two, they resume a steady glow which diminishes in brightness or becomes extinguished when the unit has its maximum charge.

The basic set has a single condenser which, as mentioned before, comprises a 55-watt-second unit. A charging time of between 10 and 12 seconds between flashes is required for this unit. If a second condenser (to be discussed in a moment) is added, the Flash-Kit becomes a 110 watt-second unit. Since it then produces a great deal more light, the charging time between flashes is lengthened to 18 or 20 seconds.

The calibrated control mounted next to the "on" switch is the "sync" adjustment. It is a 10 ohm rheostat in series with the relay coil and serves the purpose of varying the "closure" time of the relay to correspond to the "opening" time of the camera shutter. The normal closing time of the relay is approximately five milliseconds with the rheostat turned to zero resistance. When a flash gun adapter is used with the unit and plugged into a flash gun which is already synchronized to the camera for a 20 millisecond delay, the flash gun adjustment is not disturbed. Instead, the sync control on the unit is adjusted until the unit is synchronized to the present flash gun adjustment. This is what makes it possible to use either flash bulbs or

the electronic flash with instant interchangeability. The same thing applies to flash shutters which have flash guns containing batteries attached. It is possible to synchronize some flash shutters to 1/400th of a second with perfect reliability. It is usually preferable, however, to set the shutter for five milliseconds delay when synchronizing to ultra high shutter speeds.

On the right hand side of the Flash-Kit is a switch that has been provided with a "bat" handle so that it will not be easily confused with the "ball" handle of the off-on switch. The "bat" switch is moved to "flash gun" position when the unit is used with a flash gun adapter and the batteries in the flash gun are used to actuate the relay controlled flashing circuit.

To operate the unit with a camera having a flash shutter, but no flash gun, the "bat" handle is merely switched to "Shutter" position. This connects the storage batteries in the Flash-Kit to the synchronizing circuit so that additional batteries are not needed. When the contacts in the shutter close, the relay is actuated from the batteries in the unit and the time delay can still be adjusted by the same calibrated control previously referred to. In some shutters, the actual "on" time of the shutter contacts is less than the closure time of the relay. To overcome this condition, a condenser is connected across the relay coil. This stores energy and when the shutter contacts close, the relay coil continues to be energized after the shutter contacts have opened. This system makes synchronization to very high shutter speeds possible, far higher in fact than is considered possible with flash bulbs. Since only 6/10ths ampere is momentarily passed through the shutter contacts, there is no arcing or even a noticeable spark when this contact circuit is closed. The likelihood of damaging shutter contacts is therefore very remote.

To operate the unit with a shutter having built-in contacts, a ready-wired cord is provided which plugs into the "sync" socket on the right side of the unit. The user then splices his shutter cable to the cord. The lamp can then, of course, be placed in any position desired and is not confined to one location adjacent to the camera.

#### Accessories

At each end of the chassis body there is a snap-on cover to a separate compartment. In the basic unit the batteries fill one of these compartments while the other is used as storage space for carrying the adapter

*Continued on page 102*



L. W. JENKINS

FREEZING the motion of a spinning emery wheel is, of course, the workhorse job that speedlights are noted for. The 55 watt-second Amglo unit ionizes its flash tube for 1/10,000th of a second; the 110 watt-second unit has a flash duration of 1/5,000th second. The picture (opposite page) by Mark Warren is typical of outdoor shots in which speedlights are used to simulate sunlight. Since the lens diaphragm is often stopped down to a small opening, the sky is generally rendered dark because it is underexposed in comparison with the brilliantly lighted subject.





# Brightening up the Album... *it's done*

Not long ago an able amateur photographer and a snapshooter walked into their backyard with a couple of cameras; and their paired results are shown here.

Nothing much, as you can see, in the way of fine photography, but charm seems to sit more with one photographer than with the other. If you prefer the larger ones, here's how they were made.

In the first photograph, below, on the left, showing father and his three sons, the advanced amateur photographer slipped a green filter on his camera to lighten up the picture and avoid the dark blobs that would have resulted. Grass and trees have a habit of going completely black in pictures. He also gave everybody something to do; a good human interest point when taking a back yard snap of a group. It helps avoid that lined-up-against-a-wall feeling. He asked one boy to stand behind his father and muss his hair just as the picture was taken. The other son was

given a pen knife and told to play mumblypeg; and the third—the one with the baseball glove—just laughed at the camera, which in this case lent variety. The group was moved in closer together and put in a semi-circle for composition. The photographer then came to nine feet and shot at 1/100 at F:5.6 on medium speed film (Plus X).

The smiling teen-age girl is a good example of one of those typical charm shots that never really arrange themselves. First, you have to get in close; not fifteen feet, not ten feet, but six feet. Maybe even a little less if your camera will focus that close or if you have a portrait auxiliary lens. Fill the frame with the subject and avoid distracting backgrounds. Instead of obeying the traditional Law of the Brownie (sun directly behind you—and this has hammed up as many pictures as any other rule), the advanced amateur moved the teen-ager to a spot where the sun cross-lighted her

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**THE MISTAKES** the snapshooter made in his pictures, right, were: (1) he was too far away from his subjects in the group picture; (2) he allowed distracting backgrounds to intrude on the pictures. Notice how the advanced amateur came close to his subjects, arranged a simple composition and then by using a pleasing background which he threw out of focus with a large lens aperture, concentrated the emphasis on the picture subjects.



*by helping the homefolks arrange themselves in style*

hair. He placed a teen-age boy a few yards out of camera range and suggested she ask the boy: "Where do you want to take me tonight?" Hence, the natural smile. The out-of-focus background gives everything to the subject, unlike the small picture underneath as shown on page 30.

On the next shot, when the advanced amateur arrived, his Brownie friend had already made a picture of the boy and the dog (see directly below). The advanced amateur saw that the two chairs detracted from the subject matter and he simplified the basic situation of boy and dog by taking everything else away. He chatted with the boy and when the expression was right, gave a very low soft whistle which caused the dog to prick up his ears. He shot at 1/5 sec. at F:3.5 because of the partial shade. The photographer was about six feet away. If you ever go to a finishing plant and look at the pictures ready for deliv-

ery, you'll notice how many hundreds of family portraits are made at three times the distance they should be to get recognition value.

The girl up in the tree, and not too comfortable looking at that, was the advanced amateur photographer's answer to "my girl friend in a bathing suit out in the back yard." He relieved the tedium of the faceless, faraway, eye-shaded girl beneath, and, in so doing ran into a few special problems of his own which are not solved too well. A dead branch in the back yard was the setting, and the girl climbed aboard, with the photographer shooting from low down to get enough blank sky to pop out the figure. He also popped out the girl's right thigh which became too prominent because his camera was too close to the subject for good perspective. If some part of a subject extends toward the camera you'll get distortion. Watch for it in your finder and move back a foot or two.



THE SNAPSHOTTER'S errors in the pictures at the left are: (1) he saw a boy and a dog nuzzling each other and he forthwith made the picture. The advanced amateur removed the chairs, for they were stronger attention-getters than the subjects. Then he moved in and got down to a boy's eye view. The girl in the bathing suit picture followed the pattern of 10,000 other shots. He was too far away, with the sun behind his back and shining directly in the eyes of his model.

Three boys up in a tree are not so easy to take because the tree is usually a match for a portly photographer, which this one was. So, in this case, a huge fallen dead branch was used and again the photographer shot from low down to take advantage of the sky for a background, instead of a clutter of natural landscape. Compare this shot with the one below and note five things the advanced amateur did.

First, he stood about 8 feet away, instead of 18; second, he framed his picture with the boy on the right; third, he arranged his subjects in a "V" shape to enhance the composition; fourth, he asked two boys to talk to each other and the other one to look off into the distance for the sake of mood. Last, a yellow filter brought out the clouds. The snap took a moment to make; the one above took about 10 minutes to arrange. The next shot was the one on the right.

They say if it weren't for brides and babies, Eastman Kodak would have to fold up; maybe that goes for the rest of us, too. In this case, the advanced amateur spread out the train of the wedding dress to show

it off and sat the subject down on the ground because she appeared stiff standing up. Because the sun was shining directly overhead, the girl's eyes went into shadow. A Press 25 Midget bulb lightened the face and cut down the contrast between the highlights and shadows. This helped to balance the light between the bright dress and the girl's face. The subject was asked to turn her head just a little to shorten her nose; and to look up, which gives an optimistic feeling, always suitable for a bride.

As you can see, the advanced amateur photographer whose work is shown on these two pages has a philosophy of his own. He likes to arrange people so they look pleasant; to get close up to them so that most of his negative is filled by his subject; and to keep the birds, the bees and the shrubbery from becoming too intrusive. A snapshot is just what the words say: a snap. But a good picture for the family album does need some arranging and all this is hardly the path of least resistance, as you can readily see by glancing at the smaller pictures.



THE MISTAKES here are: too far away from the subject, too little thought to arrangements. The picture of the bride is complete, with a garden hose and a relative, who is shouting, "Oh, don't get me in."





The young farm boy on the fence is shown in two versions: one made by an advanced amateur and the smaller one by a snapshooter. Same fence, same boy. Again the advanced amateur resorted to his old trick of using the sky for a background and getting down low. His perceiving eye saw the boy's ripped shoe sole, which this good-natured kid called his "secret compartment." The snapshooter also resorted to his old tricks of getting too far away from the subject and including too much in the picture. The low pose is more static; the bent knee supplies a feeling of naturalness.



Two young teen-agers on the lawn are the perennial subject of a thousand photographers. The advanced amateur asked the kids to look at each other and the girl to cross her legs at the ankle instead of the knees (which she did at first) to keep her legs from looking like a big X. He brought the boy's arms to his lap to keep them from giving that strange distorted effect of the girl in the tree (page 31). He asked this model to look up to keep her eyes from being dark caverns and to give a feeling of gaiety. The snapshooter shot them as they stood, proving once again that you have to arrange the home folks if you want to paste charm in the family album.

## a complete guide to photo FLASHBULBS

The flashbulb is essentially a simple contrivance. It contains fine wire or shredded metal which burns brightly and quickly when set off by electricity. Not so simple sometimes, though, is the selection of the right lamp for a particular job. The uses for flashbulbs are so many and varied that each manufacturer markets about ten basic types—and the photographer can choose any of thirty different lamps from their combined offerings.

Which lamp is best for any picture purpose depends upon a number of factors, such as subject matter, camera and flash equipment, convenience, and individual preference. Some differences for choice are:

**Make of bulb:** General Electric and Westinghouse lamps are alike as to bulb numbers and specifications, while Sylvania-Wabash lamps may be compared by studying the data given on the opposite page.

**Lamp size** will depend largely on the area to be lighted and the amount of light needed. Flashbulbs fall into two broad classifications as to size: the midget or so-called "peanut" bulbs, having single-contact bayonet bases, and the larger lamps with standard household screw bases. Adapters are available for using midgets in screw sockets. To get the most light without hot spots, however, it is best to use the bulb for which a reflector is specifically designed.

**Reflectors**, of course, are as important as the type of lamp being used and the two should be matched to each other whenever possible. A small bulb in a well-designed reflector can equal or out-perform a larger bulb. In general, the bigger the bulb, the larger

should be the reflector. For equal efficiency, a reflector ten inches in diameter is needed with the larger flashlamps, compared to a 5-inch reflector for midgets. Since some reflectors concentrate light while others spread it, one reflector may put four times as much light straight ahead as another using the same bulb. Also, with a given bulb, a reflector may concentrate the light, or spread it too much for the angle covered by various lenses—a particularly important factor when using flash-at-the-camera.

**Shutter and synchronization** will determine the lamp type, or flashbulb class. Any flashbulb can be used with any shutter for "open-flash" pictures where the shutter is set for "Time" or "Bulb," held open while the lamp is flashed, then closed. Exposure with open-flash is governed by the total light output (called lumen-second rating) of the lamp. For example, on open-flash, a lamp designed for focal-plane shutter use (class FP) will give the same exposure as one designed for between-the-lens shutters if their lumen-second ratings are alike. Far different exposures would result, however, if the same two bulbs were used for synchronized flash, where maximum brilliance (measured in peak lumens) is the deciding factor.

### The Four Classes

Four classes of flashbulbs are currently being manufactured—each designed for a particular flash problem.

**Class F** lamps are midget gas-filled bulbs which burn very quickly with little time lag between closing the firing switch and reaching full peak light. They contain no wire or shredded foil other than primer, and are especially suited for use with inexpensive cameras having flash contacts built into the shutter.

**Class M** lamps are designed for synchronization with between-the-lens shutters at all shutter speeds. They are available in a full range of bulb sizes.

**Class FP** bulbs provide the long, steady peak light required for synchronization with focal-plane shutters.

**Class S** lamps are large bulbs that pack plenty of light. Usually they are used on open flash or synchronized at a slow shutter speed, although high-speed synchronization is possible.

*Text continued on page 88*

## SPECIFICATIONS OF FLASHBULBS

lamp	class	total light (lumen-sec.)	peak lumens (millions)	time to full peak (milliseconds)	duration at 1/2-peak (milliseconds)	mean color temperature	maxi- mum voltage
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### GENERAL ELECTRIC

Speed Midget "SM"*	F	5,000	0.9	5	7	3300° K	9
Synchro-Press No. 5*	M	16,000	1.2	20	13	3800° K	9
" " No. 5B*	M	7,000	0.5	20	13	6000° K	9
" " No. 11	M	28,000	1.8	20	12	3800° K	9
" " No. 22	M	62,000	4.0	20	14	3800° K	125
" " No. 22B	M	27,000	1.8	20	14	6000° K	125
Focal Plane No. 6*	FP	15,000	0.6	....	30	3800° K	9
Focal Plane No. 31	FP	77,000	1.5	....	53	3800° K	9
Photoflash No. 50	S	94,000	5.2	30	17	3800° K	125
" No. 50B	S	43,000	2.5	30	17	6000° K	125

### SYLVANIA-WABASH

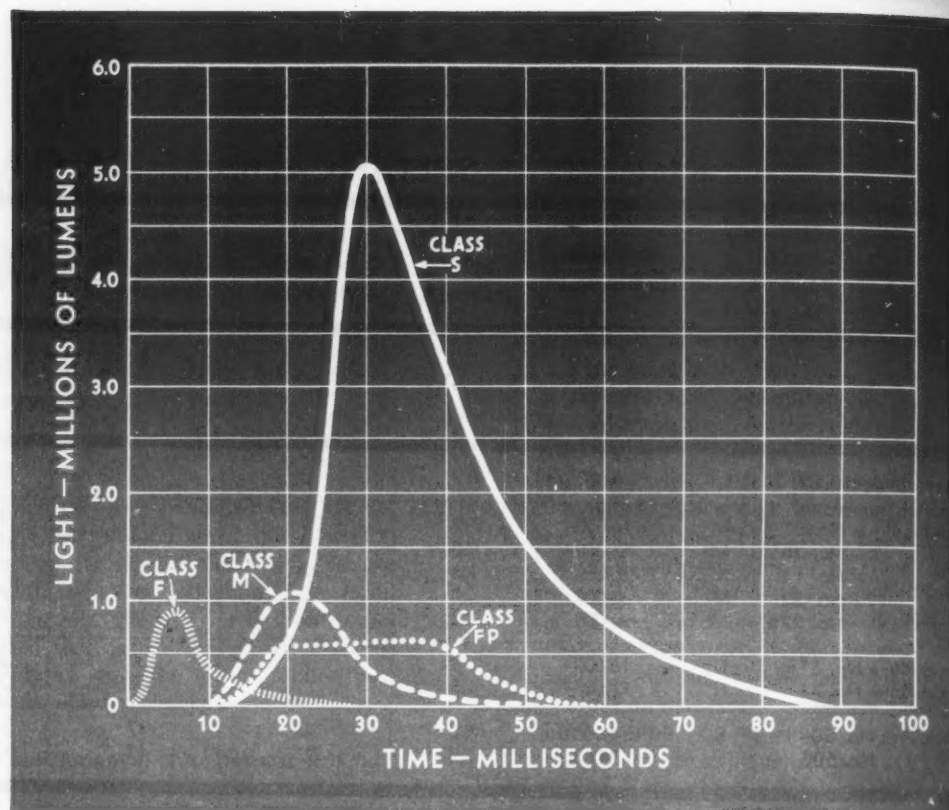
Speed Flash "SF"*	F	5,500	.6	6	7	3400° K	9
Superflash No. 0	M	16,000	1.0	21.5	15	4000° K	9
" Press 25*	M	22,000	1.2	21.5	14	4000° K	9
" No. 25B*	M	8,500	.6	21.5	14	6000° K	9
" Press 40	M	30,000	2.0	21.5	14	4000° K	9
" No. 2	M	60,000	3.0	24	18	4000° K	9
" No. 2B	M	30,000	1.5	24	18	6000° K	9
" No. FP-26*	FP	15,000	.6	....	28	4000° K	9
" No. 2A	FP	75,000	1.4	....	52	4000° K	9
" No. 3	S	110,000	5.0	30	29	4000° K	125
" No. 3B	S	55,000	2.5	30	29	6000° K	125

\*midget (bayonet base) lamp

### WESTINGHOUSE

Specifications of standard Westinghouse flashlamps as given in Government Contract No. TS-9807 are practically identical with those of bulbs manufactured by the General Electric Company. Lamps of similar characteristics are numbered alike by both.





### Characteristic Curves

The characteristic curve of a typical flashlamp in each class is shown in the composite time-light chart above. Manufacturers supply these charts for each of their bulbs so that photographers may tell at a glance what flashlamp will best fill a particular need.

A time-light chart gives a quick picture of the lighting performance of a flashbulb as it flares up and dies out. From left to right the chart shows the time of action in one-thousandths of a second, called milliseconds. From bottom to top it shows the amount of light in millions of lumens (six 100-watt household lamps produce about a million lumens) at any given instant during the combustion of the lamp.

To read the information from a flash chart, follow the curved line. The start of the line shows how soon after the electricity surges through the lamp, the first light appears. This is usually around 10 milliseconds, except in class F lamps which burn almost instantly.

The line rises to a peak as the lamp filling burns up to full brilliance. The top of the curve indicates "peak

lumens," which measures the maximum brilliance of the light. In the chart, notice that the class F lamp reaches a peak of about  $\frac{1}{2}$ -million lumens in 5 milliseconds, the class M lamp a little over a million lumens in 20 milliseconds, the class FP lamp about  $\frac{1}{2}$  million lumens in 20 milliseconds and the class S lamp over 5 million lumens in 30 milliseconds.

Passing the peak the line curves downward to picture the light as it dies out. The total length of the flash is measured from the point at which the curve starts to the point where it ends. With the typical class F lamp on the chart, this is from zero to 30 milliseconds—30/1000 second, or about 1/30 second. However, the first bit of light, and the long tail after the main flash, are so low that they affect a photograph very little.

More important is the "flash duration at  $\frac{1}{2}$ -peak," which means the time it takes after the fire has reached half brilliance (about 2 milliseconds for class F), until it has come up to peak and died off to half

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brilliance again (about 9 milliseconds). In the class F lamp shown, this duration (2 to 9 milliseconds) is 7 milliseconds. Seven milliseconds (7/1000 sec.) is somewhat longer than 1/200 second (5/1000 sec.). That's why a class F lamp on "open flash" has nearly the action-stopping effect of a 1/200 sec. shutter setting.

The class M lamp shown has a flash duration at  $\frac{1}{2}$ -peak about twice as long (13 milliseconds) compared to the class F lamp (7 milliseconds). The class FP lamp, however, has a duration of 30 milliseconds at  $\frac{1}{2}$ -peak. Here the light holds peak brilliance long enough to allow the slit of the focal plane shutter to cross the film during synchronized exposure.

### Synchronization

The flash duration at half peak and the time-to-full-peak are the most important factors in synchronized flash photography. In general, it takes a lamp about four times as long to come to full peak as it takes a shutter to get wide open after it's tripped. A synchronizer simply gives the lamp enough of a head start so that it reaches peak light immediately after the shutter is fully open.

Look at the four lamp curves again. A synchronizer properly set for a between-the-lens shutter and a class M lamp would get the shutter wide open at about 17 milliseconds. At 1/200 second (5 milliseconds) the shutter would start to close at 22 milliseconds. Now if a class F lamp were used with a camera so synchronized, the lamp would light up and nearly die out before the shutter got open. If a class FP lamp were used, almost all the light occurring after 22 milliseconds (about  $\frac{2}{3}$  of the total) would be lost at 1/200th. And if the class S lamp were used, the shutter would have opened and started to close long before peak light was reached; thus almost all the light would occur after the exposure.

Notice, however, that if the shutter is set for 1/25 second (40 milliseconds) it again is open at 17 milliseconds in class M synchronization, and stays open until 57 (40 + 17) milliseconds. At this slower speed it would get all the useful light of either the FP or the S lamp.

Obviously a synchronizer set for class F lamps can be used with any bulb, providing a slow enough shutter speed can be used.

The four classes of lamps can be remembered from the letters used to distinguish them. Class F is Fast, reaching a peak in 5 ms., and delivering most of its light during 7 ms. Class M is Medium, with a peak at 20 ms; class S is Slow, peaking in 30 ms; and class FP, Focal Plane, holds an even peak light for 30 ms. or longer.

The total light of any two lamps can be compared by looking at the *area* under their curves. For example, in the chart, both class M and class FP lamps have three rectangles of area under their respective curves—their total light is nearly equal, but peak light and duration at half-peak are very different.

Lumen-seconds are the measure of this area under the curve, representing total light output of a flashbulb. Thus, a flash of light producing one million lumens and lasting ten milliseconds (1/100 second) would be rated at  $1,000,000 \times 1/100$  or one-thousand lumen-seconds.

From a study of the time-light charts, it's evident that in general the choice of one lamp type over another can be reduced to the following:

**Class M Midgets:** Portable, convenient, plenty of light for newspaper, candid and amateur use at all speeds with between-the-lens shutters.

**Class F Midgets:** Quick flash stops ordinary action. Often used with simple cameras having built-in flashing contacts.

**Class FP Midgets:** For high shutter speed synchronization with most focal plane shutter cameras up to  $2\frac{1}{2} \times 3\frac{1}{4}$  inch negative size.

**Class M Standard:** Small size gives plenty of light for most shots with between-the-lens shutter and synchronizer. Large size is for extra range or high speed shots where maximum light is needed.

**Class S Standard:** To cover large areas, or for exposure with small apertures or very slow film, usually in studio reflectors on open-flash. They may be used for synchronized shots at 1/25 sec. or longer with class M (.020 sec.) synchronizer setting.

**Class FP Standard:** For high shutter speed synchronization for larger cameras (up to  $4 \times 5$  negative size) or for extra light, when subject requires it, with smaller cameras.

Other lamp specifications of importance are shown in the tables. Three volts (two flashlight batteries) is ample to fire any flashbulb reliably. When higher voltages are used, lamps may flash a little faster. On house-current, there is a slight risk of arcing inside the lamp, causing a short and a blown fuse. Due to the danger of arcing, some of the larger lamps which are commonly used at 110 volts have a built-in fuse to protect the house circuit.

Flashbulbs come in different color temperatures, ranging from 3300° K through 6000° K. This is important in color photography, where the light used must be matched to the color response of the film. The 6000° K blue-coated flashbulbs are of the same characteristics as their corresponding clear flashlamps except that they have a blue filter coating matched to the response characteristics of daylight color films. The coating reduces the total light and peak light (see data). These lamps are always designated by the letter "B" following the manufacturer's bulb number.

They are designed to solve the problem of lighting deep shadows outdoors, bringing the lighting contrast within the range of daylight color films. Or they may also be used indoors and at night with daylight color films.

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## salon calendar

★ follows P. S. A. recommended practices

Closing Date	Name of Salon Date of Exhibition	For Entry Blank, Write to
October 22	★Sixth Chicago International Color Slide Exhibit. Museum of Science and Industry, Chicago, Ill., November 10 - 13	Otto E. Schmitz, 3047 N. 78th Ave., Elmwood Park 35, Ill.
October 24	★2nd Minneapolis Color Slide Exhibition. Y.M.C.A., Minneapolis, Minn., November 15, 16, 17	Warren Anderson, 113 S. Sixth St., Minneapolis, Minn.
October 29	★2nd Annual Magic Empire Color Exhibit. November 11 - 15	Joe E. Kennedy, 1029 Kennedy Bldg., Tulsa 3, Okla.
November 1	★18th Minneapolis International Salon of Photography. Minneapolis Institute of Arts, Minneapolis, Minn., December 3-31	Warren Anderson, 113 S. Sixth St., Minneapolis, Minn.
November 7	★Ninth Annual Exhibition of Nature Photography. Louisville Free Public Library, Louisville, Ky., November 21-December 5	Kentucky Society of Natural History, Box 81, University of Louisville, Louisville 8, Ky.
November 26	★Fifth Salt Lake International Color Slide Salon. Salt Lake City, Ogden, Provo, Logan, Utah, December 7-14	S. Wayne Smith, M. D., 1086 East 21 South, Salt Lake City 6, Utah
December 1	31st International Los Angeles Salon of Photography. Art Center Gallery, 5353 W. Third St., Los Angeles, Calif., January, 1950	Herman Wall, Secretary, 672 S. Lafayette Park Place, Los Angeles 5, Calif.
December 7	★5th Mississippi Valley International Salon of Photography. Auditorium of Stix, Baer, Fuller, St. Louis, Mo., January 9 - 22	Noel F. Delporte, Gen. Salon Chairman, 586 Stratford, St. Louis 5, Mo.
December 12 monochromes; December 15 slides	★18th Detroit International Salon of Photography. Detroit Institute of Arts, Detroit, Mich., January 22 - February 12	J. Barrett Burnell, Secretary, 19429 Forrer, Detroit 9, Mich.
December 15	★First Louisiana Amateur Photographers Salon and Competition. Louisiana Art Commission Galleries, Old State Capitol, Baton Rouge, La. January 3 - 29	Louisiana Art Commission, Old State Capitol, Baton Rouge, La.
January 11	14th Virginia Photographic Salon. Valentine Museum, Richmond, Va., February 12 - March 12	L. Franklin Penney, 724 N. 35th St., Richmond 23, Va.



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a second chance like this"**



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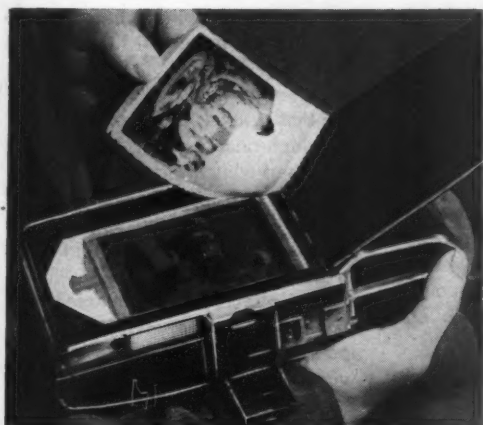


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"Just before leaving a friend's house his dog lay down beside our baby. A cute shot. I snapped. A minute later, I saw the Polaroid print. In my haste I had moved . . . lighting was bad, too.

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## New POLAROID *picture-in-a-minute* Camera helps you improve your pictures on the spot



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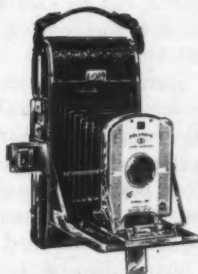
It's a real thrill to see your pictures a minute after you make them. That's true the first time or the hundredth. The picture you lift out is printed on dry, white-bordered durable stock, ready for frame or album — complete even to deckled edge! *Land* prints pass the life-tests used to check conventional snapshots.

Seeing your pictures sixty seconds after you snap the shutter is like moving your dark room into the daylight. If you are not satisfied with your first shot, you can change your exposure, your lighting, the angle or the kind of filter you use — on the spot — get *exactly* the picture you want.

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		2 3/8" x 4" (616)	
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	Fold	2 3/8" x 4" (616)	
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## new products

### New Kodak Enlargers

In anticipation of the long winter hours most photographers will soon be spending in their darkrooms, Eastman Kodak Company announces two completely new enlarger models to be available shortly.

Called the Kodak Fluorolite (illustrated) and Hobbyist Enlargers, they are described as neither condenser nor diffusion types, but operating, rather, by a modification of the optical device known as the "integrating sphere." A hollow sphere, housing the light source, is coated inside with a highly reflective paint which catches the light, reflecting and re-reflecting each ray until the light is completely integrated, or evenly distributed. The lamphouse, with this integrating-sphere design, is similar in both enlargers and is the key to the performance of the new units.

The lamp used is a new 22-watt, 8 1/2" circular fluorescent lamp. Its shape and size allow practical compromises to be made in the integrating-sphere design, one of which is the large negative opening. The design of the lamphouse and enlarger head is such that despite the large size of the opening, no direct rays from the lamp ever touch the negative.

The new enlargers, according to Kodak, have approximately the same speed and contrast as condenser-type enlargers, plus the ability to minimize dust and negative defects which characterizes diffusion-type systems. Because of their "cold light" illumination, they may be left burning continuously without the temperature of the enlarger head rising above 100° F.

A tool of many purposes, the Fluorolite Enlarger can be used as a 2 1/4 x 3 1/4 view camera, for copying, slidemaking, and cine-titling, as well as for 35mm picture-taking, photomicrography, microfilming, clinical photography and other specialized applications.

To provide for distortion control, the bellows has a tilting back with zero indicator. The bellows assembly, with the lamphouse, is mounted on a new type of bi-rail, diamond-shaped frame, which is light in weight, yet structurally strong and rigid. The enlarging head may be raised or lowered with



one hand by a knurled knob, leaving the other hand free to make simultaneous focusing adjustments. Rotating glassless and combination negative carriers are both available, as well as an accessory color head for using 5-inch diameter filters above the carrier.

Lenses available are the 2-, 3-, and 4-inch F:4.5 Kodak Enlarging Ektanon and Ektar lenses, plus the 101mm F:4.5 Ektar lens in Supermatic shutter. Priced at \$112.50, including Federal tax, the Kodak Fluorolite Enlarger is available through all Kodak dealers starting in October.

The other new Kodak enlarger, the Hobbyist model, is designed as a low-cost, high-quality enlarger for handling black-and-white work without expensive frills and adjustments. It uses the same illumination and negative carriers as the Fluorolite model, but differs in other respects.

The enlarger head is mounted on an inclined column, providing enlargements from 1.4X to 7X. It is equipped with a Kodak Enlarging Ektanon F:6.3 89mm lens mounted in focusing tube.

Available in November, the Kodak Hobbyist Enlarger will be priced at \$47.50, including Federal tax.

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### New Color Movie Film

Dynacolor is the name of a new 8mm color film for home movie enthusiasts. Developed by William J. Brown, former president of the Kryptar Corporation, the new film is a fine

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Been timing your darkroom work by counting "chimpanzees" or "thousands-and"? For *real* accuracy what you need is a G-E T-48 automatic interval timer . . . the timer that lets you *see* the seconds on the dial . . . *bear* them as they tick off.

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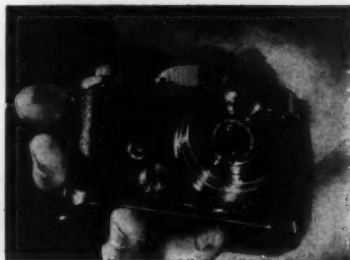
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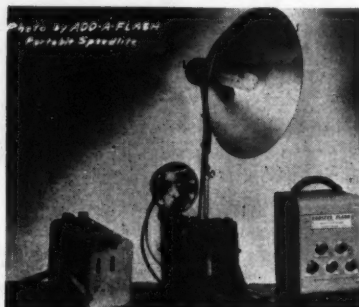
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grain, three-color film with a Weston rating of 8. Initially it is offered only in 8mm daylight-type rolls, but 16mm rolls will be available shortly, with magazines and tungsten-types to be announced later. Factory processing of the exposed film is included in the price of \$3.00 for 8mm rolls. Both manufacturing and processing of the new Dynacolor film is handled in automatic machines designed by Brown.

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ROCHESTER, NEW YORK

### Powerful Portables

For electronic flash with plenty of punch, U. S. Speedlite Co. announces new advance design Add-A-Flash Portable Speedlites. The two models, powered with 165 and 225 watt-seconds, give the high intensity light of large flashbulbs, such as the No. 22, with an action-freezing flash of 1/5000 second. Typical exposures with the 165 watt-second model and



popular pan films are F:22 at 20 feet and F:8 at 60 feet. With the 225 watt-second model, these distances can be increased 30%.

Equipped with GE FT-220 flash-tubes, the portables are powered by rechargeable batteries, or can be plugged into AC outlets for studio use. The standard units will fire up to five extension lamps and higher intensity light may be had by using the Company's Booster Flash to provide a total power of 500 watt-seconds. Priced at \$179.50 plus tax, Add-A-Lite Portable Speedlites are sold through franchised dealers.

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### FR Long-Ring Timer

Whether you're timing a roll of film in the developer or an egg on the kitchen stove, the new FR Interval Timer is designed to call you with a long, pleasant ring. In addition, the

new timer has a pre-setting feature, operated by turning the transparent ring-around-the-dial to the desired interval, which is especially convenient for such jobs as processing film in open trays or tanks. This enables you to adjust the timer when lights are on, then operate it readily in total darkness.



Pre-setting also comes in handy when a certain interval is to be repeated a number of times. Priced at \$5.95, the FR Timer will time any interval between one and sixty minutes, has an automatic mechanism that never needs winding, and is constructed of moulded black plastic.

THE FR CORPORATION  
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### Reflex with a Rangefinder

The Swiss watchmaking industry's answer to the question of mini-reflex cameras is the recently imported Alpa Reflex. It is a costly, precision 35mm single-lens reflex incorporating features similar to those of other cameras in its price range. The Alpa, however, gets around the biggest disadvantage of other reflex models by providing both reflex focusing and rangefinder focusing, along with a direct-vision optical view finder.

The focal plane shutter with built-in flash contacts provides speeds from



1 second to 1/1000, Time, and (with a special knob) double-exposures. The dial does not rotate when the shutter is released, so that the speed setting may be read at any time.

A full line of coated and color cor-

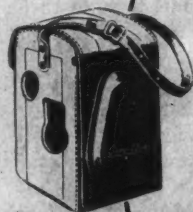
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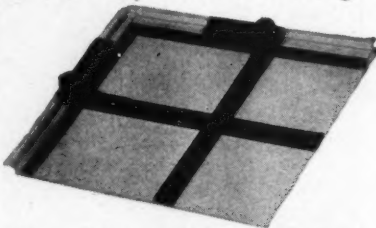
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rected lenses in bayonet mount is available for the Alpa. These range from a 35mm F:3.5 wide-angle, through a normal 50mm F:1.8 to the longest telephoto, a 180mm F:4.5. All lenses of long-focal-length are supplied with an extra-length helical screw for close-up focusing without extension tubes. For extreme close-up and copy work, extension tubes and a copy stand with lights are available. With the standard 50mm F:2.8 coated lens, the Alpa Reflex is priced at \$269.50. Further information and prices may be had by writing the U. S. representatives:

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## Sun Ray Easels

The manufacturers of Sun Ray Enlargers announce two all-metal easels. Built of heavy sheet steel and angle



plates, they are welded throughout. Masking is provided by metal straps under spring tension. Tax-included prices are \$4.50 in 8x10 size and \$6.50 in 11x14 size.

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## NOTED IN PASSING

The "world's fastest between-the-lens shutter" was recently announced by Eastman Kodak Co. Called the Synchro-Rapid 800, it has a top speed of 1/800 second and is being supplied on the latest Kodak Tourist Camera. Unlike other between-the-lens shutters, whose blades move in a reciprocating manner (pausing briefly after opening and before closing), the Synchro-Rapid 800 combines the opening and closing motions into one smooth and continuous movement of the shutter blades. This action was achieved by designing the blades so that they pivot and rotate through a partial circle inside the shutter housing—as rotation progresses the shutter aperture is opened, then closed. It will be some time before the new shutter is available in different sizes and on cameras other than the Tourist (priced at \$95.00).

Two new press camera accessories, an all-metal film-pack adapter and a Busch "Scope" 4x5 optical viewfinder, are now being manufactured by Busch Precision Camera Corp., 411 S. Sangamon, Chicago 7, Ill. Equipped with a triple lens system, the new view-finder features a telescoping eyepiece tube, click-stop parallax adjustment, and a mask for use with revolving camera backs. It is priced at \$9.95 and is available with masks for various focal-length lenses.

Underwriters' Laboratory approval has been given Acme-Lite Company's complete line of photo lighting equipment, including their Redcap clamp-on reflectors and Saf-T-Lite units.



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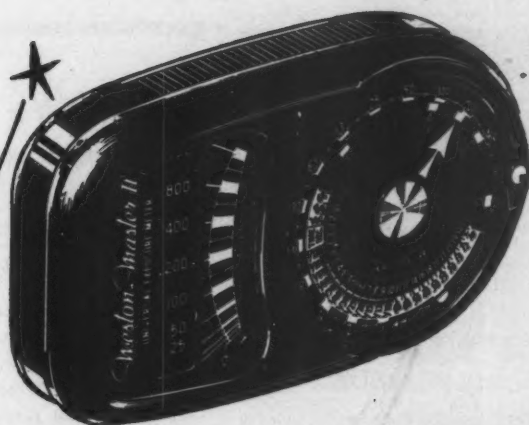


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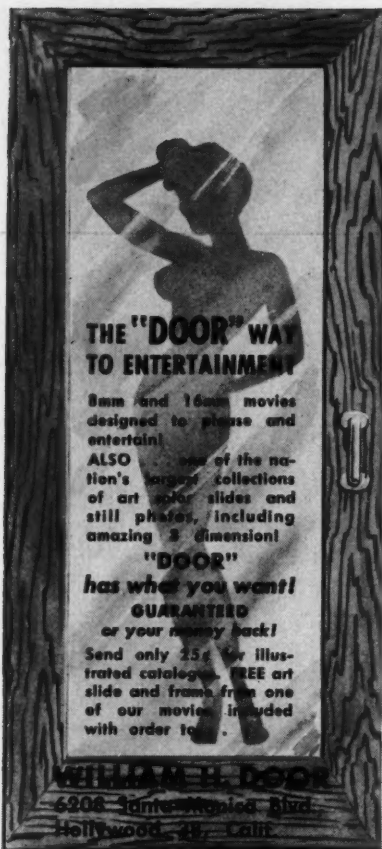
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## previews films for home screening

### *The Great Chase*

360 feet, 16mm sound, b & w.  
Castle Film—\$17.50

This is the type of slapstick comedy that made the Paramount Cops famous in the silent days. W. C. Fields, who cut his stage eyeteeth in that era, is the hero of the piece. Parents need not fear that the pliable minds of their children will be warped, although it is a cops-and-robbers thing. Virtue wins out in the end, the robbers end up in the arms of the law, and Fields is rewarded with a hearty handshake and a handsome calendar from the president of the bank.

Originally released as a Field's feature, "The Bank Dick," the plot follows the conventional line. Fields, as an innocent bystander, becomes involved in a bank holdup and by a series of happy accidents is discovered by the police with one of the robbers out cold in his lap. A second robber escapes only to come another day. Fields gets a job guarding the bank.

As a bank guard Fields proves himself even more synthetic than in his role of hero. He disarms a small boy of a water pistol and is routed by the lad's irate mother. When the escaped robber returns to give the bank a second working over, Fields is forced to drive the getaway car. Then the fun begins. The director of the film had no inhibitions about the mechanical possibilities of an automobile. As Fields herds it over hill and dale it comes apart, piece by piece. Finally a wheel falls off, the car quivers to a stop, and the police overtake it. Fields has again made a thrilling and courageous capture.

This film will keep the children whooping and squealing—even a second and third showing is received with no apparent sign that it's only the same old chase over again. It satisfies the old folks too, those who think of slapstick with nostalgia. The photography has, in spots, some of the defects of the old silent films, chiefly careless lighting. Its director knows how to stage a chase and does not waste such minor opportunities to please; Fields' ability to pantomime is a good part of the picture.

A natural for the youngsters, and like junior's electric train, probably just as much fun for the parents and grandparents. Seven minutes.

### *Robin Hood*

400 feet, 16mm sound, b & w.  
Official Films—Brownie Bear—\$17.50

A perennial favorite for both children and grown ups, and one which is difficult to spoil, even with effort. Apparently without effort, the director of this picture has halved his audience by a coarse humor that might be acceptable to the uninhibited tastes of youngsters. Certainly discriminating parents will take a dim view of the barnyard humor which inspires the action and the script.

In this film Brownie Bear appears as Robin Hood, and spends seven minutes expertly preoccupied with the posteriors of the king and court. Not only do his arrows find their way into the rear elevations of his victims, but in the closing scene he paddles the king with his own broadsword. The princess, whom he abducts and marries, confines herself to one sage remark, "It's in da bag."

The costuming and characters follow the familiar tale but the script is innocent of plagiarism. The notion of grafting American slang on Medieval English action is original and the effect at times stretches the imagination to the breaking point. Animation is only fair but there is good music in the background. In fact the music is best when it drowns out the dialogue, which it frequently does. Seven minutes.

### *Pirro and the Lamp*

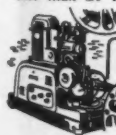
400 feet, 16mm sound, b & w.  
Official Films

The natural conclusion is that this film would follow the story of Aladdin and the Magic Lamp. There is no connection whatever with this or any other story. Pirro, a puppet, learns the lamp is lighted by electricity which comes from a wall socket. It takes four hundred feet of film and several thousand words to explain this to Pirro. The big question about this

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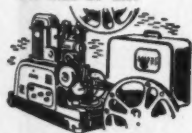
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controls, conveniently  
mounted on opposite  
side of projector

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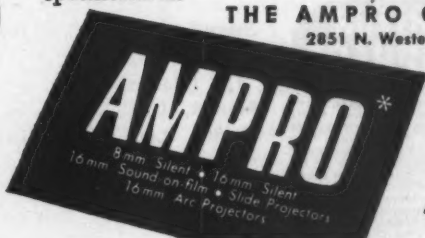
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film is "Why was it made?" It does not reach any particular age group nor is it entertaining.

### O. W. I. Films

We have found ourselves preoccupied with U. S. and British wartime films released by the U. S. Office of War Information for a small service charge. Most of these films were top secret during the war and reveal a whole new world of adventure and courage which has been known to us only through the brief yarns of service men. Three of them, "Target for Tonight," a British film, "The Life and Death of the U.S.S. Hornet," U. S. Navy, and "The Story of the Black Cats," U. S. Navy, are included in the following. The films are two reels each.

Of these, the most entertaining is "Target for Tonight," the story of a bombing mission over Berlin. The sound is not too good, and this, combined with the difficulty of deciphering a thick English accent, makes the dialogue difficult to follow; but in spite of this the film packs plenty of suspense and excitement. The technique and production are excellent.

"The Life and Death of the U.S.S. Hornet" covers the career of the Hornet, from Doolittle's bombing of Tokyo to the battle of Santa Cruz when the Hornet, crippled and dying, was laid to rest by her own skipper. Of all the ships to fight in World War II, the story of the Hornet is perhaps the most widely known and appealing. In spite of the handicaps of battle conditions, the photography is good. Those who have failed to visualize the war at sea from printed accounts will find this picture worth ten thousand words.

"The Story of the Black Cats" tells of the PBV Navy patrol flying boats, the legendary Catalinas, which were pressed into service as night bombers to harass Japanese shipping. The picture takes us on a bombing mission from a South Pacific base to the attack of an enemy convoy. The film is a tribute to the fine work of these brave craft and their braver crews.

### Suggested Program for November

"The Life and Death of the U. S. S. Hornet," U. S. Navy Release.  
"Spain," Land and It's People Series, Coronet Instructional Films.  
"Fun on the Run," Castle Films.  
"Prairie Chickens," Post Pictures Corp.

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## New Speedlight Kit

Continued from page 80

cable and lamp. If color work is con-  
templated, or if smaller diaphragm  
openings of F:16 and F:22 are desired  
for increased depth of field, the power  
of the unit can be doubled by adding  
another condenser. The second con-  
denser costs \$9.50 and fits exactly into  
the storage compartment.

If a second light is desired, a com-  
plete extension set consisting of lamp,  
ready-wired cable, and a specially de-  
signed reflector fitted with either  
spring clamp or a stand fitting costs  
\$27.73. This is plugged into the ex-  
tension light socket, and is generally  
used as the key light for picture making  
because it is considerably more power-  
ful than a light mounted in the camera  
flash gun. The increase in power is  
due solely to the higher efficiency of  
the special reflector over that of the  
flashgun's reflector for electronic flash  
use.

Both the 55 and 110 watt-second  
units can be used with either one or  
two lights. If still more lights are  
needed, another complete Flash-Kit  
can be added and the two units oper-  
ated as one by connecting the "sync  
sockets" together.

## The Power

The two Willard wet cell storage  
batteries provide a total of four volts.  
Made of plastic, each battery has in-  
dicating balls which show the condition  
of the charge and are visible both  
when the unit is being used and when  
the batteries are being charged.

It is impossible to recharge the  
batteries while they are still hooked  
to the unit; this completely alleviates  
the danger of someone turning on the  
power supply of a unit and allowing  
the higher voltage of the charging  
batteries to surge into the condensers,  
thus causing them to break down.

The battery charger comes in a  
separate case and is made so that the  
batteries can be recharged overnight  
without danger of an over charge. The  
charger itself costs \$9.50 and comes  
ready-wired for plugging into your  
house current. (With slight modifica-  
tions it can also be hooked up so as to  
draw its power from automobile bat-  
teries.)

The 8-foot lamp cables used with the  
Flash-Kit are exceedingly flexible and  
appear small in diameter compared  
with most electronic flash cables. A  
conservative rating on these cables,

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# It's Here! THE NEW AMGLO FLASH-KIT

## with the "100% OUT-PERFORMANCE" GUARANTEE

### ALL PARTS ASSEMBLED AND IT'S PARTLY WIRED

From the AMGLO Laboratories, originators of the self-ionizing photo speed lamps, comes this modern miracle! Back of it is the experience acquired in supplying thousands of speedlight users with lamps, parts and accessories.

There's nothing like it on the market, this new AMGLO FLASH-KIT! Unbelievable performance and features far in advance of anything similar. *Difficult parts are factory-wired*—you finish it yourself in less than an hour with only a screwdriver and soldering iron. *The Kit is complete*, with nothing else to buy (even the solder is supplied).

No longer is it necessary to improvise or to use substitute parts... or to follow obscure diagrams. The AMGLO FLASH-KIT is complete, from the die-formed aluminum case and chassis to the highly engineered and pre-matched component assemblies. Clear concise instructions are furnished for completing the unit.

#### Synchronizes to Flash Gun or Flash Shutter

The AMGLO FLASH-KIT is the nearest to "Universal Sync" of any speedlight unit ever devised. If you already have a flash gun and want to use it interchangeably with flash bulbs and speedlight, get the ready-wired adapter, cord and plug. This adapter, with the AMGLO Lamp, plugs into your flash gun just like a bulb and you synchronize the speedlight unit to your camera shutter with your present flash gun adjustment.

It's just as easy with a flash shutter. A cable connects from the shutter contact to "sync socket" on your speedlight unit. The control switch on the unit is switched to "shutter." You then use the batteries in your speedlight unit to operate the control relay when your shutter contacts close. The relay takes much less current than a flash bulb, so there is less chance of contact trouble than when using the same flash shutter with flash bulbs. With most flash shutters you can sync to higher shutter speeds with the relay-controlled AMGLO FLASH-KIT than you can with flash bulbs.

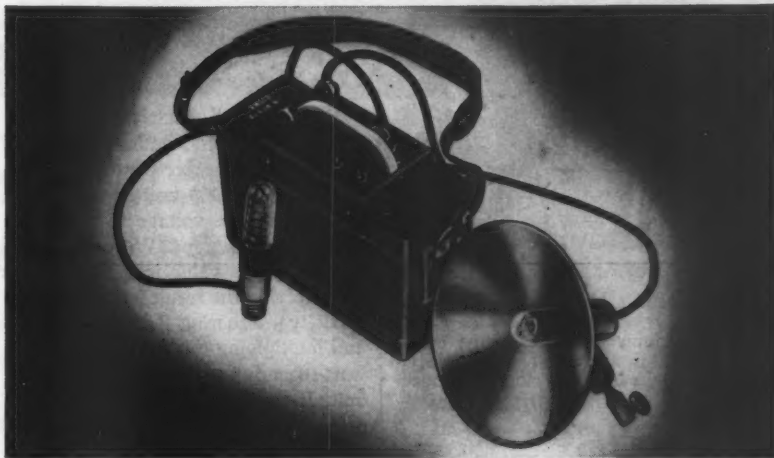
#### More Light—Watt-Second for Watt-Second

Most flash units are rated in watt-seconds energy input to the flash tube. The amount of actual light output, however, depends on the efficiency of the flash tube used and the design of the reflector.

With AMGLO high efficiency self-ionizing flash tubes and the new AMGLO Ultra-Reflectors attached to various flash units not AMGLO-equipped, light readings were obtained which were 100% to 600% higher than those made with the original lamp and reflector equipment!

#### SOON! 1950 AMGLO SPEEDLIGHT CONTEST!

Make a note of this. There's another AMGLO Speedlight Contest coming up, with the closing date November 15, 1950. Any picture you take with an AMGLO Lamp is eligible for one of the 1000 prizes. Entries will be coming in from all over the world, since thousands of AMGLO equipped speedlight units are in service abroad. Further information will be available soon. Meanwhile—start shooting with AMGLO for the 1950 AMGLO Speedlight Contest!



Since a speedlight power supply is a costly proposition, it is only good judgment to use an AMGLO Lamp—the electronic flash lamp that gives more light per watt-second. When you buy or build a speedlight unit, make sure it is AMGLO-equipped. *There's no more important factor to watch for!*

#### Also NEW AMGLO ULTRA-REFLECTOR—UP TO 300% GREATER LIGHT EFFICIENCY

The specially designed AMGLO Ultra-Reflector will give you light readings 100% to 300% higher than other reflectors! You get a perfect spread of evenly distributed light, with no hot spots or uneven areas. Finish is non-tarnishing.

#### Tops in Appearance

There is no flash unit on the market, regardless of cost, that has better quality parts. In "looks", too, the AMGLO unit is "quality." The aluminum case and panel assembly is etched before the durable "hammered silver" plastic finish is applied. The completed unit weighs less than 10 lbs. Finally, there's room in the case to add another condenser for greater power!

#### AMGLO'S "100% OUT-PERFORMANCE" GUARANTEE

"Double or More Light"—That's AMGLO'S slogan for the new FLASH-KIT. And so confident are we after making hundreds of comparative light measurements and tests that we

make this unheard-of offer: Compare your completed AMGLO FLASH-KIT, using AMGLO Ultra-Reflectors, with any electronic flash unit not using an AMGLO Self-Ionizing Lamp and not using a new AMGLO Ultra-Reflector. If it does not provide 100% to 300% more light—watt-second for watt-second—return it within 10 days for a full refund of your money, plus Five Dollars extra for your trouble!

#### What You Need to Get Started

Refer to the coupon below for easy identification of the following items.

If your camera has a standard flash gun, get Items A-B-D-H .....Cost \$110.38  
If it has a flash shutter but no flash gun, get Items A-C-D-E-H .....Cost \$109.76  
If you want to add the extra condenser to make your unit a high power 110 watt-second speedlight, add Item F .....Cost \$9.50  
If you want to make your unit a two-light speedlight, add Item G.....Cost \$27.73  
If you want an extra set of batteries, add Item I .....Cost \$9.50

#### What and How to Order

If your dealer has not yet secured his supply of AMGLO FLASH-KITS or should not co-operate with you in specially obtaining your kit—you may purchase direct from AMGLO. Use the Introductory Coupon below and enclose check or money order. All orders will be filled in rotation, so ACT NOW FOR EARLIER DELIVERY!

### AMGLO CORPORATION

4234 Lincoln Avenue, Chicago 18, Illinois

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<input type="checkbox"/> B	1 Adapter for standard flash gun with cable and plug ready-wired.....3.80	<input type="checkbox"/> I	1 Extra set batteries and plug, ready-wired.....9.50
<input type="checkbox"/> C	1 Plug and cable which I will connect to my flash shutter cord....1.28		<b>TOTAL</b> .....
<input type="checkbox"/> D	1 AMGLO S804X Flash tube.....16.33		My Check <input type="checkbox"/> Money Order <input type="checkbox"/> Enclosed
<input type="checkbox"/> E	1 AMGLO Ultra-Reflector with cord and plug <input type="checkbox"/> lamp stand fitting <input type="checkbox"/> spring clamp, SPECIFY WHICH at \$11.40 each.....	NAME.....	(Please Print)
<input type="checkbox"/> F	1 Extra condenser to make 110 watt-second unit.....9.50	ADDRESS.....	
<input type="checkbox"/> G	1 Extension light set comprising 1 S804X AMGLO Flash tube, new AMGLO Ultra-Reflector with <input type="checkbox"/> lamp	CITY.....STATE.....	

☐ Please send me more information on the AMGLO FLASH-KIT and Ultra-Reflector.

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however, is 9000 volts which is far beyond that encountered in service. With the self-ionizing lamps and relay controlled circuits, moreover, the cables are actually "alive" only during the fleeting instant that the lamp is flashing. (1/10,000th second for the 55 watt-second unit; 1/5000th second for the 110 watt-second unit.)

**This Business of Watt-Seconds**

Practically all electronic flash units are rated in watt-seconds energy input to the lamp. In other words, the watt-second rating of a unit is determined by squaring the voltage to which the condenser is charged. With the Amglo Flash-Kit, this value is 2.35 kilo-volts (multiplying the result by one-half the capacity). Squaring 2.35 gives us 5.5, and multiplying this by 10 gives us 55 watt-seconds for the single condenser unit. If two condensers are used, the power is doubled and we have 110 watt-seconds.

Actually, however, the watt-second rating of a unit is by no means a positive yardstick of its light output. Different types of flash tubes range considerably in the degree of efficiency with which they convert electrical energy into light. Similarly, reflectors vary tremendously in their efficiency of light output. The reflector designed for use with the Flash-Kit's 5804X lamp is shaped to provide some of the directional characteristics of a spotlight. While its spread is better than 45°, the angle of perfectly flat illumination is 30°.

The Amglo people seem to be ready to back up some pretty strong claims on the efficiency of the Flash-Kit's tube and reflector setup. Their written guarantee offers the purchaser of a Flash-Kit full refund price plus \$5 for his trouble if this unit does not provide 100% more light, watt-second for watt-second, than any unit not Amglo equipped.

**The Finished Package**

The entire chassis case of the Flash-Kit is made of aluminum, ribbed where necessary for extra strength. The finish is one of the new plastic coatings that resembles hammered silver in appearance. While designed with enough power to be used in the studio or home as a stationary unit, it is portable enough for outdoor use. The 55 watt-second unit weighs approximately 9½ pounds; the 110 watt-second unit weighs about 12½ pounds. A chrome handle in the center of the

case makes it easy to carry; for outside use it also has a leather shoulder strap.

**The Kind of Light You Get**

Previous articles in *Modern* have already explained the characteristics of speedlight illumination in detail. Briefly, the Amglo 5804X flash tube provides 40 million peak lumens of light at the sunlight color temperature of 6500° Kelvin. Translated into picture-making qualities, this means that you get a soft, penetrating kind of light that closely matches daylight. Outdoors, the speedlight can be used either as a fill-light to open up the shadows caused by sunlight, or as the main key light itself. For color work, Daylight Type film is used because the color temperature of the light closely approximates open sunlight. Some workers, however, prefer to use a very mild correction filter such as a Wratten CC15 to provide a more ruddy flesh tone.

**It Can Always Be Better**

Repeated tests have shown it to be powerful for its size and as fool-proof in its functions as a piece of electronic equipment can be. It would be nice if production costs could be whittled down so as to reduce the price of accessory parts. At present, however, the only way these costs could be reduced materially would seem to be by sacrificing the high quality of parts that now go into the unit. That, of course, would be poor economy all around.

We did find that some makes of flashgun battery cases hold the Amglo socket better than others. The Heiland battery case, for instance, holds the socket firmly so there is no danger of disturbing the contact by jarring the cable. Although the flashgun tube fired in all other makes of battery cases tested, the contact in some of the cases was none too reassuring.

Our only other criticism thus far has to do with reflectors. Since one light must be used with whatever flash gun a purchaser may own, and since no flashgun reflector can match the efficiency of a reflector specifically designed for the 5804X flash tube, a two-light setup making use of one excellent reflector and one less efficient reflector is a little like walking down the street with one foot off the curb. The latest report is that Amglo Corp., whose engineering department is located at 4234 Lincoln Ave. (Chi-

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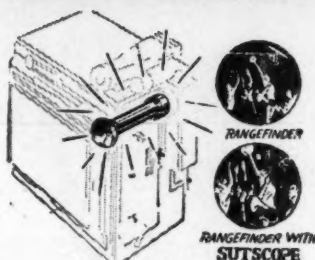
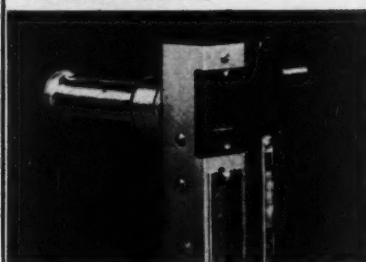


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cago), may someday produce a reflector that can be used on the more popular makes of flashguns when flash tubes are to be used in place of the regular flashbulbs.

## Made In England

Continued from page 52

a group of Boer war survivors had met once again for their reunion lunch, but to capture the *spirit* of the moment when two old soldiers re-lived an incident of the past. In other words, my aim was to capture the *feeling* of comradeship that existed between them.

Visiting firemen from America are generally surprised by the simplicity of the average British news photographer's equipment. The standard press camera that has been in use here for years is a 9 x 12cm (that is just under a 4 x 5") plate camera, equipped with a focal plane shutter ranging from 1/10 to 1/1000 second. The light weight box-like body of the camera has collapsible struts, and a 6" focal-length Zeiss Tessar F:4.5 lens is fitted into a focusing mount on the front panel with a quick-reference focusing scale on top. An extending pointer arm from the lens is used to alter the focus. The quick-change back is usually fitted for single metal negative slides.

That's it. No coupled range-finder, no double extension, no front-lens shutter. It couldn't be much simpler—and that's its merit. By handling an outfit solely designed for speed, and by becoming an expert at guessing distances, the British news photographer could probably outshine most of his competition in any contest calling for one-chance-only fast action shots.

The era of synchronized flash has given us a man-sized headache. There is only one British-made press camera, the 9 x 12cm V. N. Delivery time on this camera, is two years. Otherwise we have had practically nothing new in the way of photographic equipment since the beginning of the war. Thus the need of a front-lens shutter and a flashgun for synchronization work meant the ransacking of camera shops for likely Compur shutters. This source was soon exhausted, and it has only been very recently that British manufacturers have started to turn out electronic flash outfits. You can imagine the vicarious thrill—and also the sense of depression—we get out of reading the equipment ads in American photo magazines.

Speed Graphics are gaining in pop-

ularity here in spite of the restrictions on import. You see quite a few of them being used on Fleet street because American picture agencies are able to supply their own London bureau staffs direct. The British cameramen's original prejudice against the Graphic was based on its weight and size in comparison with our much lighter outfits. With the increased use of flash and the bigger demand for the news-feature type of picture, however, the Graphic cameras are in a class by themselves.

In the miniature camera field, both the Leica and the Contax cameras have been popular for years. This is especially true of the magazine photographers who also have a warm spot for 2 1/4 x 2 1/4 twin-lens cameras of the Rollei type. In newspaper photography the miniatures are less widely used, the chief reason being the time and care required in processing films to produce quality prints. If the job demands it, however, you can bet that the news cameraman will be in there clicking away with a miniature. The 35mm cameras are especially handy when a photographer doesn't want to be too conspicuous in his picture-making. In England, as everywhere else, the size of a miniature camera fools the public every time. People who would run a mile from a press camera will go about their business unabashed if the photographer uses a miniature. They refuse to believe that a miniature "sees" as well as a bigger camera.

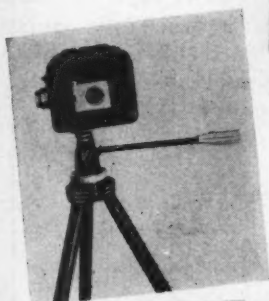
I am lucky in that I happen to have four cameras to choose from when I am given an assignment. These consist of a British VN Standard 9x12cm press camera, a 3 1/4 x 4 1/4 Anniversary Model Speed Graphic, a Rolleiflex Automatic, and a Leica 111b with lenses ranging from 3.5cm to 20cm. Since there is no such thing as an ideal camera for all jobs, I have the advantage of being able to select a camera suitable for the type of story to be covered. This is a very comprehensive outfit by normal standards, and many a first-rate photographer is turning out superb news pictures with only one camera to his name. If it were absolutely necessary, I believe I could get by with two cameras, a Speed Graphic and the Leica. Like news photographers everywhere we feel it isn't so much the camera as it is the man behind the eye, behind the finder—that gets the picture.



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Only the **NEW IMPROVED**  
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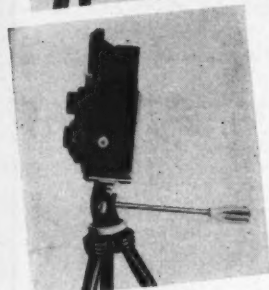
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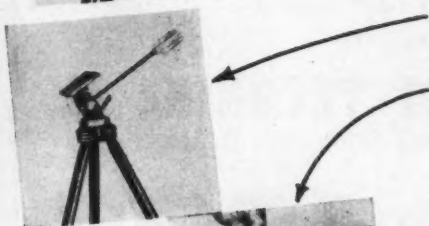
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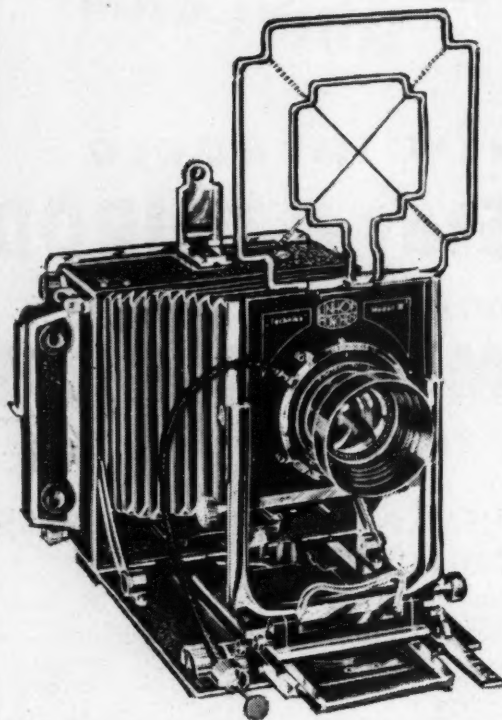
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# NEW PROCESS makes Enlarged Color Prints by Separating Color Emulsion From Film Base

Once in a while, photographers get the feeling they're pulling rabbits out of tall silk hats. That's the way a new process called Larjachrome strikes color workers using it for the first time.

The Larjachrome technique is a simple method for converting a color transparency into an enlarged color print, using the emulsion of the transparency. In the short space of about thirty minutes, the emulsion is stripped from the transparency, expanded to about twice its normal size and combined with a white, opaque support paper to form the print.

Since the emulsion itself forms the print, all the quality of the original transparency is retained. There is no possibility of loss of detail, disturbance of color balance or lack of reg-

ister of the colors. In addition, any finishing or retouching method that can be used on black-and-white prints can also be used with color prints produced by the Larjachrome process.

The print may be retouched, for instance, with transparent oil or water colors. It may be waxed or varnished. It may be given a matte finish or even ferrotyped to a glossy finish.

At a cost of about half a dollar for a 5x7" print and sixty cents for an 8x10", Larjachrome prints are considerably cheaper than anything available with other processes at this time. Of course, the transparency is lost for future use—unless a color duplicate is made before the emulsion is stripped from the film base. There are other

*Continued on next page*



1. The transparency and a piece of temporary support paper are soaked in water. Then the gelatin backing is removed from the transparency by scraping well into the film base with a razor blade.



2. The transparency and support paper are combined face to face, squeegeed on a ferrotype tin and allowed to dry naturally. When dry, the two will be bonded together.



3. The dry assembly is placed in Film Base Solvent and allowed to stand until the film base loosens—about 20 minutes for fresh film. The film base is next peeled away and the picture wiped dry.



4. The picture is polished several times with fresh solvent to remove all traces of film base. Meanwhile, a large piece of Final Support Paper is put to soak for about five minutes in Paper Conditioner.

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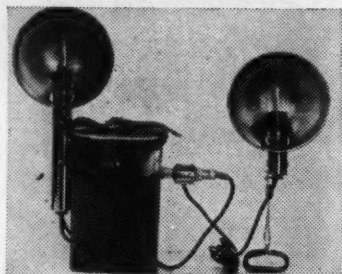
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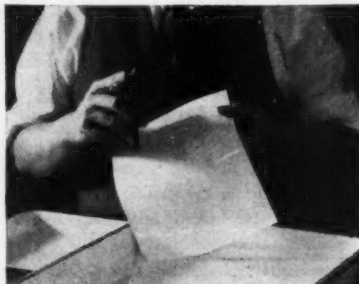
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5. Next the picture is placed in Expansion Compound solution kept at 150° F. After a minute or two, the transparency emulsion leaves the temporary support paper and expands.



6. The expanded transparency emulsion is hooked carefully on a finger and lifted out of the expansion solution. It then is transferred to a tray containing water and the final support paper.



7. Slowly and cautiously the emulsion is opened so that it lies centered on the final support paper. Then support paper is slowly lifted from the water without disturbing the emulsion.



8. While the paper is held convex, the emulsion is gently smoothed out. Finally a wet brush is used to smooth the emulsion and remove air bubbles. The finished Larjachrome print is ready for drying.

**New Larjachrome Process**

*Continued from preceding page*

advantages, however, to offset this, including:

1. Color shots may be made on small size film and expanded, resulting in film savings.

2. Glass slides, unaffected by heat, may be obtained by using the process.

3. With proper coating, the emulsion may be mounted on metal, porcelain, white cellulose acetate and other materials.

4. Over-exposed color transparencies may be salvaged since ideal transparencies for color prints by the Larjachrome method are on the light side. In addition, it is possible to vary the contrast and brilliancy of the finished print with a special reducing solution.

A skilled darkroom worker need not even sacrifice his color transparency if all he wishes to do is expand the size. The emulsion may be stripped from the base, expanded and then combined with a larger transparent piece of gelatin, which means that a larger transparency is obtained for the cost of the smaller piece of film.

The process also has applications in black-and-white photography. It is a quick, handy remedy for reticulation and a good means of softening a contrasty negative. Photographers using small film also will find it an excellent way of increasing the size of a negative so that retouching, otherwise impossible, may be done.

Larjachrome materials and kits are manufactured by the Larjachrome Corp., 303 West 42nd Street, New York 18, N. Y.

**The Abbott Distorter**

*Continued from page 48*

climb, an A-24 sagging in the middle in a too-fast pull-out from a dive and contorted by the violent maneuver.

A perfectly reasonable portrait of a friend can be distorted to make her look like a feline menace. Or full length shots can be distorted to make the subjects resemble either beanpoles or balloons. If you let yourself go you can outdo Dali.

So far the distorter has not been put on the market, but they are neatly boxed and stacked on a table in Miss Abbott's studio at 24 Bank Street in New York City. If you would like further details we suggest you write to her, directly.



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## Amateur Report

Continued from page 15

All of Eddie's pupils are asked at one time or another why they spend so much time in photographing the nude or in drawing from the model, whether at the beach or in the classroom.

The answer is, of course, that in this particular part of the training his students are learning to recognize and apply light to forms and to delineate form through the use of the camera or the pencil. Can anyone suggest a form more lovely or one which presents a greater challenge to the tyro than the nude human figure which has perplexed and delighted artists of every age?

Half-a-dozen models are always on hand and these are posed in the nude, draped in bathing suits, half buried in the sand or merely shot as they romp in the surf. If a breeze springs up, drapes are flattened against the models and the cameras record every undulation. Of course these draped figure shots have become a trade-mark of the Art Center.

Eddie has been using the same models for several years. By listening to his instructions, the models have learned a great deal and have helped young photographers through difficulties.

One of the girls, watching me fuss with a light meter, informed me that the correct exposure was a fifth at F:16. She was right!

The models enjoy the trips hugely, since they are a welcome variation in their daily routines. Because of the rapid, erratic pace of the day, they have no idea what is going to happen next and term the outings "a day in the squirrel cage." Buried to her waist in the sand, one of the newer models was asked if she could hold a rather difficult pose for a few seconds more, and retorted that she could hold the pose if someone would "scare away these damn sand fleas."

Strangely enough, not all of these trips are made with the camera. Sometimes cameras are expressly forbidden and the drawing board and pencil take over, for Kaminski expects his students to be as handy with the pencil as they are with the camera.

This sounds like a strange bit of logic to be coming from an instructor of photography. But Eddie hasn't the slightest interest in teaching his students to be photographers; he is interested only in teaching them to see

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and to utilize what they see. Accordingly, he feels that they should be placed in an environment which contains a maximum of things to be seen, hence the trips to the beach.

Next morning, back at the school building, the negatives are put in the soup and from here on in any resemblance to the normal photographic process is unlikely.

With an overwhelming delight in complete departure from normal kid-glove handling of negatives, yesterday's beachcombers solarize, reticulate, boil, freeze, abrade, scratch, gouge, and smear the negatives and then combine the figure shots with the still life material in every possible way to achieve results which stagger the imagination.

A bit of moss, enlarged and distorted becomes the basic element in the design which may appear on your necktie this spring.

Much of what is done in this manner is, of course, pure fantasy but experimentation soon leads to the development of sound techniques and practices in the special handling of negatives when the ordinary techniques cannot fill the bill.

As a case in point, examine the current rash of advertisements for silverware which feature a solarized photograph of the ware. To the general public this is something new, but at Art Center it has been done for years. Selective reticulation, which involves the reticulation of all of the negative except perhaps a glove on a model's hand, and makes that article stand out in a manner impossible to achieve in standard practice, is being used for hosiery, diamond and glove ads at the present time.

Many of these students will not learn photography, many will not learn to draw, a few will become the top men in the field some day. But whether he rises to the top or fails miserably, every single man will tell you that he learned to see from Eddie Kaminski at Kaminiski Beach.

By and large, although they may not always be able to keep up with him, the students have both affection and respect for Eddie. These are fostered by the eccentric mannerisms and expressions which he habitually uses. He pretends complete ignorance of the camera and its workings and refers to it contemptuously as "the gadget." He divides all cameras into two categories: four-by-fives and up are the

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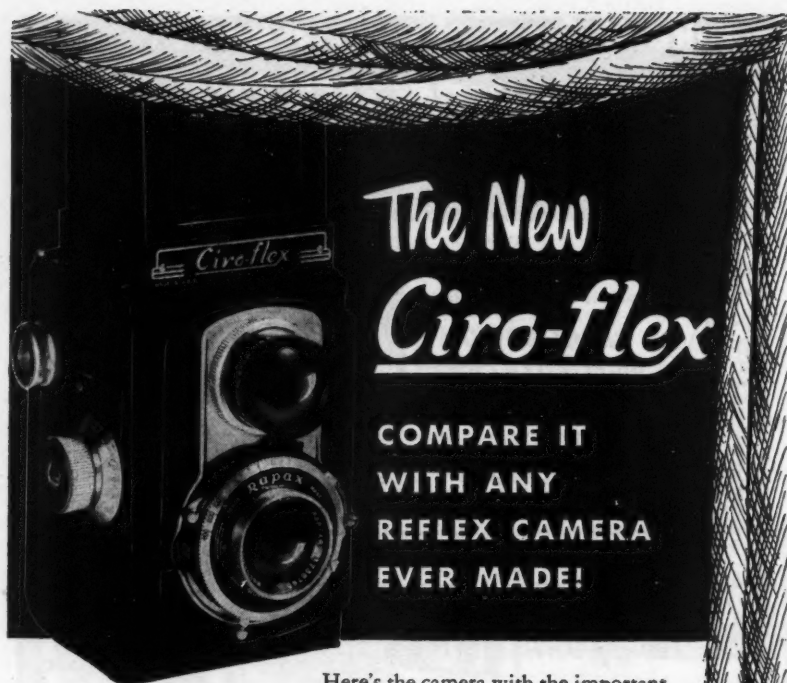
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"cameras," while anything smaller, to Eddie, is a Kodak."

To my way of thinking, Eddie reached an all time high when we discovered a dead seal on the beach and he went wild over the textures evident in the fur and exposed bones. He immediately asked a model to lie down alongside to furnish contrast, but the whole idea came to naught when it was discovered that the seal had been dead quite a while.

WILLIAM O. BROWN

### Ektacolor

Continued from page 59

including washes, take less than one hour. About one-third of the time is spent in total darkness; the balance of the process is carried out in ordinary room light. This rapid processing makes Ektacolor a desirable color film for aerial mapping. Rolls of the new film are being tested in Air Force cameras.

First, the film is developed in Ektacolor Color Developer. This developer is included in the processing kit, or may be bought separately. The color developer forms dye and silver images on all three emulsion layers at the same time. Then the film is rinsed in a stop bath, hardened in a hardening and fixing bath, bleached to convert the silver to silver salts which can be fixed out. The developing and fixing time is approximately 19 minutes.

Since finger marks in color are beyond repair, the photographer should make a practice of handling all film so that the right thumb and index finger feel the code notches every time a sheet is handled. Ektacolor emulsions are very soft, and subject to scratches and abrasions.

A variation from the standard 68° F. of one-half a degree in the color developer throws off the color balance of the finished transparency. Color balance is determined by the rate of penetration of the developer through each emulsion layer. If the temperature is too high, the top layer which forms the yellow image will be over-developed adversely affecting its contrast. If the temperature is too low, it will lower the contrast and produce a yellowish tinted picture.

A prime requisite, therefore, is a Process Thermometer, an instrument of high precision which records to within one-tenth of a degree Fahrenheit. The cost is about \$9.50, however its rugged construction makes it last a lifetime.

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Except for the developer, solutions used in processing Ektacolor may be safely used at 67° to 72°F.

Ektacolor should be processed in hanger and tank equipment. Hard rubber, glass, stone or crockery tanks are the best. Since the bleach has a corrosive action on metals, stainless steel and other metal tanks are less desirable unless coated with enamel. If extreme care is taken in handling the film, tray developing is possible, although not recommended by Eastman. Four tanks or trays are necessary for the four solutions needed to process Ektacolor. In addition, an efficient washing tank should be provided.

Proper agitation is important. When the hangers are placed in the different solutions they should be agitated for 15 seconds by lifting them out and replacing them several times.

To prevent streaks on the negative, caused by lowering hangers into the tank too rapidly, some photographers lift the hangers straight up, then when near the top they tilt the hanger to the right the first lift, and to the left on the second lift, so as to permit the solution to sweep the negative surfaces with never a repeating coverage in any two successive lifts.

Ektacolor films appear reddish and bluish and somewhat opaque after the final washing. As the film dries the negative takes on a strong overall cast of orange, which is normal; although effective printing colors of the negative are complementary to those of the subject.

### Proofing

Many photographers like to check their negatives in a black-and-white print to select those that they wish to use for color printing. Proofing for expression, composition, and lighting is easily accomplished by contact printing the Ektacolor negative on special black-and-white color sensitive proof paper. It is available in four sizes, ranging from 8x10" to 16x20" and costs 90 cents for a 10-sheet package in the smallest size. This paper is developed under a Wratten Series 2 safelight in the same way as any contact printing paper.

If a photographer does not wish to make proof prints, negatives can be judged for exposure by playing them over a frosted glass viewer of the type used with positive color transparencies.

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### Color Printing

From the Ektacolor negatives, full color prints of the subject can be made in sizes up to 16x20" by the dye transfer method. Gelatin relief printing plates, called matrices, for printing on paper are prepared by printing the Ektacolor negatives directly on the new Pan Matrix film, either by contact or enlarging. Exposures are made through red, green and blue filters—Wratten Filters Nos. 70, 61, and 47 respectively—to produce the required color separation. After exposure, the sheets of Pan Matrix film are specially processed with a gelatin tanning developer to produce positive relief images in the gelatin that absorb dye in proportion to their thickness. The three matrices are then dyed cyan, magenta, and yellow, respectively. A color print is produced when the dye images are transferred, in register, to a sheet of dye transfer paper.

Exposure determination is facilitated through the use of a densitometer for accuracy. A skilled visual guess, however, can produce good results. In fact, in learning to make color prints, many experts believe that the novice is better off to have experience

in judging gray densities visually. Either way, the examination of the gray card which was photographed with the subject when the Ektacolor negative was exposed is necessary to determine the basic exposure of the matrix.

The need for determining color balance and correcting it by making one or more masks, if necessary, is eliminated with Ektacolor film, since the colored couplers, incorporated in the film, effect automatic color corrections. In effect, it produces in one film three color-corrected separation negatives.

The Pan Matrix film comes ready-punched to facilitate registry in the exposure of the matrices and in the dye transfer printing operation. Although Eastman has developed a new vacuum register board for color printing, with the pins set to fit the registry holes for this work, the amateur can make a dye transfer register desk for himself. A suitable desk can be made by mounting a sheet of 1/2-inch thick glass, 16x20", on a 20x24" board. The glass insures the necessary flatness for perfect roller contact throughout the dye transfer operation. Pins, placed to coincide with the

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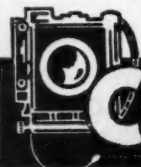
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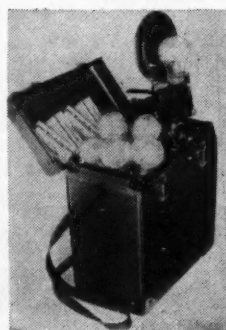
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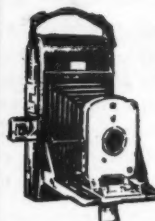
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ready-punched holes, can be purchased at any hardware store and mounted on the board.

Details of the dye transfer process are adequately explained in literature accompanying the Pan Matrix film, and dye transfer paper. The following books are also recommended for supplementary reading and instruction in dye transfer operations and can be obtained through *Modern Photography*, 22 E. 12th St., Cincinnati, Ohio:

*Color Photography for the Amateur*, Keith Henney. Whittlesey House, McGraw Hill. \$5.00.

*Curtis Handbook of Color Photography, Part II*. Thos. S. Curtis, 2718 Griffith Park Blvd., Los Angeles 17, Calif. \$3.50.

*Kodak Dye Transfer Process*, supplement to the *Kodak Reference Handbook*. 25 cents.

*Photo Lab Index*, Henry M. Lester. Morgan and Lester. \$16.00.

## New Ways to Use Flash

Continued from page 67

light, overexposing the area it covers, yet the room itself will be lighted. For best effects, a stop difference between window light and fill is ample. By this I mean that exposure should be calculated for each light as if you were using it alone. Then move the window light forward or backward until it is one stop hotter than the fill.

Night shots of exteriors of buildings using the "cathedral gimmick" are extremely effective. This time it's done in reverse. Flashbulbs indoors pour light out through the windows. The flash at the camera illuminates the house, but the window light is "hotter," and overexposes the area covered, resulting in shafts of light.

Some time every photographer has to make a "banquet" shot. Is the area too large to cover with one flashbulb? Try "reverse English" with the flash factor that appears on the package of flashbulbs. Divide the number by the aperture you wish to use. That will give you the maximum distance covered by the flashbulb you are using. Arbitrarily, let us assume the result is twenty feet, but the room is forty feet long. Obviously a second bulb is required to cover the back half of the room. It should be placed at a halfway mark aiming at the rear half of the room. What of the room forty feet square? You will need four flashbulbs of the same type—one

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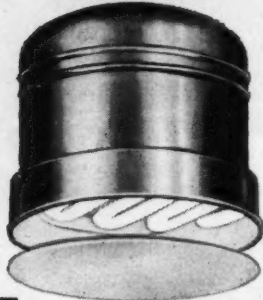
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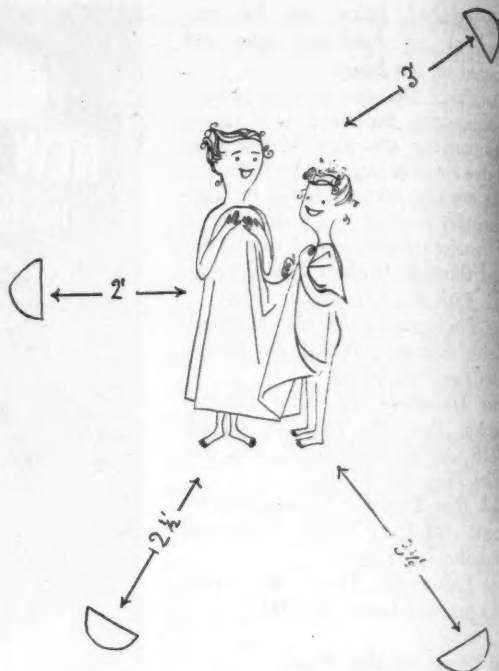
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**SLIDE SUPPLY CO., Box 1031 Canton, Ohio**

**LIGHTING** diagram for Tana Hoban's color photograph on page 60. Four No. 3A flashbulbs were used with a 2A correction filter. The lens was a 8 1/2" Cooke. The exposure was 1/550 at F:5.6 with a Graflex.



covering each segment twenty feet by twenty feet, each aimed to cover its own segment with a minimum of overlapping.

You've heard about filter effects without the use of filters on synchro-sunlight pictures. Here's the way to do that: Take a meter reading of the general scene. Arbitrarily, let us assume that the result calls for an exposure of F:16 at, say, 1/50th second, with a certain film. Your subject is standing ten feet from the camera. You want your background dark, but your subject bright. Easy. The flash number at 1/50th second with the chosen film, for a Press 40, is, let us say, 300. Dividing the distance between the subject and the light into that guide ( $300 \div 10$ ) your exposure for flash is F:30. Obviously, if you use that exposure, your subject will be amply lighted by the flash but the scenery will be underexposed, so will go black when printed. For shots of a live subject against the sky, this is very effective, particularly when the sky, to use a Hollywoodism, is lousy with clouds.

To tone down the sky darkness, using the same set-up, you have several alternatives. First, use a smaller flashbulb, like the #0, for which the flash number, under identical circumstances would be 200, exposure for which would only slightly underexpose the scenery. If a Press 40 is all you have, cover it with your hand-

kerchief, thus cutting output 30% or more. If you can't use either means, move your subject further away from the light, thereby changing the resultant F-stop.

If, in your synchro-sunlight shot you wish perfect light balance between flash and sun, arrange your light so that the individual exposures for sun and flash are identical. You may then use sun for either key or fill, determining your own light placement instead of being a victim of the elements.

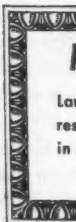
Just as photography generally requires imagination, so does flash, not only in the "gismos" you make to further its efficiency and adaptability, but in the "gimmicks" you devise to put wallop and originality into the finished product. One point to always keep in mind is that guide numbers, flash factors or flash numbers (whatever the term you use), are arbitrary rather than absolutely specific. They are usually applicable in their original form only to the ideal set-up: light, reflective walls, light subject matter. You must temper exposures for flash with reason. If the room is dark, not reflective, hung with black drapes, open at least one stop over that shown by the guide. If shooting outdoors at night, in pitch darkness, open two stops over that shown by the guide. In reverse, if you are shooting in a room with mirrored walls, or in a small, very reflective

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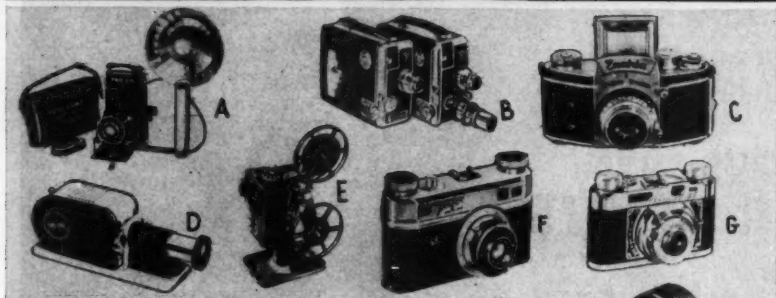
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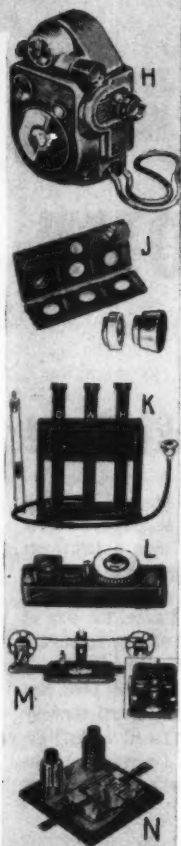
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room, stop down one stop over that given by the guide. Black will swallow light. White will reflect it.

Slow speeds are the best speeds for getting most light. Where extreme movement is not present, 1/50th second is a better bet than 1/200th second. You get more usable light at 1/50th, therefore more depth of field. At 1/200th second you utilize only 33% of the peak light. At 1/100th second you utilize only 55% or 60%. At 1/50th second you get most of the light. The average duration of light of most flashbulbs, other than special types, ranges around 1/25th second.

What do you do if your flashbulbs give too much light for a specific setup? One of the following five things:

Switch to a smaller bulb (and save money)

Switch to a slower film (and get less grain)

Diffuse with a handkerchief (softer light)

Move your light or subject back

Use a shorter exposure.

Of the five alternatives, the first three make the most sense.

Never forget that exposure with flash is determined by distance between the light and the subject, and not by distance between the camera and the subject. Your camera may remain in one spot, but your light may be moved forward or backward, and exposure must change with movement of the light.

If you are using two flashbulbs of equal intensity, and both (when you run a line from the bulb to the subject) are within a thirty degree angle your light is virtually doubled. Your aperture, then, should be one stop smaller than that determined for one bulb alone on this set-up.

If your two flashbulbs are within a forty-five degree angle, one acting as the "key," the other as the "fill," but both throwing light directly at the part of the subject that the camera picks up, stop down 1/2 stop over the exposure required by the "key" alone. Since the "fill" sidelights, only half its useful light is picked up on the front of the subject.

If your two flashbulbs are beyond forty-five degrees, and little light from the "fill" covers the foreground of the subject, compute only for the "key" and forget the "fill."

If, in addition to the "key" and the "fill" you have a synched flashbulb lighting only the background, another

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It's Cold

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Focusing Iris Dia

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kicking down only on the hair, another halo-ing the back of the head, but none helping the foreground, forget them when computing exposure for the "key."

To master flash you must learn what it will do. The mechanical procedures should become reflexes, and your mind should be free to mold picture material into fine negative images which tell a story.

### It's Cold Outside

Continued from page 40

not certain as to how to do this, don't experiment. Instead, have your photo dealer do it for you.

### Focusing Mount and Iris Diaphragm

The focusing mount and iris diaphragm of the lens should be thoroughly cleaned with a little dry-cleaner's naphtha applied with a camel's hair brush such as artists use. Next, wrap a little absorbent cloth around the end of a toothpick and wipe the moving parts. Follow this with an application of a very light machine oil or special camera oil, applied with the cloth and toothpick. Finally, wipe all oiled areas again with a dry cloth to remove excess. A careful person can perform this operation without fear of injuring his equipment. But if you aren't sure of yourself, let an expert who knows how to do it for you.

### Odds and Ends

The spring motor of your motion picture camera should be examined. If the lubricant has become gummy, the spring should be thoroughly cleaned and re-lubricated. The removal and replacement of the spring motor requires special equipment and should only be done by an authorized dealer.

Before using a metal tripod in the cold, remove all traces of lubrication from the telescoping parts with naphtha. This will keep the tripod from sticking or freezing up. Wood tripods are best for outdoor use in winter.

It is a good idea to wear thin gloves made of cotton, silk, or rayon (leather hardens) under heavy gloves when working outdoors. You can then remove the heavy gloves for short intervals to adjust your camera without danger of having your skin become stuck to cold metal parts.

# It's FUN!

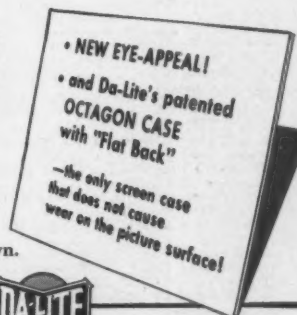
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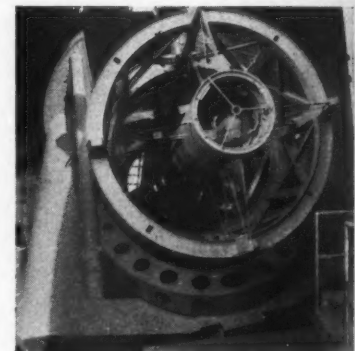
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## Focus Infinity

Continued from page 34

of gravitational pull. Others, the variables, seem to pulsate, periodically growing larger and smaller, brighter then fainter, with a remarkable precision of timing. One of these is the giant star Betelgeuse in Orion, more brilliant by 1600 times than the sun. With its 215 million mile diameter, it is greater than the orbit of the earth around the sun, but the substance of Betelgeuse is as tenuous and rare as a man-made vacuum. Another star, small as stars go, is the white dwarf known as the companion of Sirius. This is a star so dense that a chunk the size of an ice cube would weigh nearly a ton.

And what beyond our stellar system? Until recently, men did not know. They counted those stars they could see through their telescopes and called them the Universe. Beyond they could only speculate, as Immanuel Kant did when he proposed his "island universes" in 1750. Then, just twenty-five



... star photographer at work

years ago, the 100-inch Mount Wilson Telescope proved Kant more right than he himself could have believed.

One hundred million island universes, or galaxies as they are called, are now estimated within reach of our telescopes; and each is a separate and distinct star world, much like the Milky Way. Where they end... if they end, is as big a mystery today as the boundaries of our own stellar system were a quarter-century ago. It is also one of the mysteries astronomers hope to solve with the Hale camera-telescope.

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tween the sun and the earth. But in man's probing of the infinite, the clues must be pieced from light which began its journey earthward millions and millions of years ago. Five hundred million light years the giant 100-inch Mount Wilson reflector reaches out for the starlight it traps on its photographic plates. Doubly sensitive, the Hale star camera records light that has travelled 1,000,000,000 years through space and time, perhaps from star worlds that no longer exist.

What kind of instrument is this that will photograph stars as they appeared a billion years in the past? Statistically it is 500 tons of steel, 18 tons of glass, a fractional ounce of aluminum—all worked with the finest precision of which modern man is capable.

Heart of the Hale celestial camera is the 14½-ton mirror which serves as a lens to gather starlight and focus it on the photographic plate. Poured at Corning Glass Works fifteen years ago, the 200-inch Pyrex glass blank has since been ground and polished, tested, then polished again, until its curved face is accurate to within one millionth of an inch. Spread tissue-thin upon this near-perfect glass support is the reflecting surface, a two-molecule

layer of aluminum applied in vapor form.

Like the mirror it cradles so carefully, Palomar's mounting is another remarkable feat of engineering. Beneath the great dome, the massive base frame squats tripod-like on a concrete foundation separate from that of the observatory building. Two of the steel supports, reaching high above the floor, form the North pier of the mounting; opposite is the South pier, short by comparison. Slung between the piers, tilted towards the North Polar Star, a tremendous yoke of tubular steel rotates from East to West. It swings on a horseshoe-shaped bearing, 46 feet in diameter, and is so delicately balanced a child could turn it. This 170-ton mass of steel serves as a panoramic head for the Hale camera, permitting access to nearly every part of the heavens.

The camera itself is an open tube of I-beams pivoted between the double arms of the yoke mounting. At the tube's lower end is the 200-inch mirror, its polished surface held in precise alignment by a sensitive system of supporting plungers which compensate for every strain on the glass. Fifty-



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five feet away, at the outer end of the tube, rides the photographer in the prime-focus cage.

Although a comparable engineering structure, such as a bridge or tower, often bends several inches under load (the top of the Empire State Building will sway a foot or more in a stiff wind), the 55 feet of telescope tube never deform more than 1/16-inch in any operating position. This remarkable accuracy allows the Hale camera's automatic pilot to pick out the same speck of light, night after night if need be, without varying its position on the photographic plate by more than a half millimeter.

Elaborate precautions against error were likewise taken in constructing the observatory building. The effect of wind on the dome, humidity, air temperature—which at Palomar, incidentally, averages between 20° and 70° F.—vibration and heat from the machinery, all these and many other factors were considered in designing Palomar. Even the visitors' gallery is a glassed-in enclosure, insulated from the dome to prevent human body heat from affecting the critical balance of the instrument. To eliminate the human ele-

ment as much as possible from telescope operation, all routine adjustments and star computations are handled by fully automatic controls.

Within the observatory building, the photo lab is a small room on the ground floor. On a shelf, there is a supply of Eastman Spectroscopic 5x7-inch glass plates, in about a dozen different emulsions. A chart on the wall lists a total of 99 emulsions, varying as to speed, contrast, or color sensitivity. No color film is used.

In the photo lab, too, are kept plateholders for the Hale star camera, as well as filters—quite ordinary 5x7 rectangles that are placed next to the film. Filter colors are red, orange, and yellow in various densities, no different from those used by earthbound photographers. The plateholders are the standard studio-type, but load on one side only. Before loading, the holders are dusted carefully with a camel's hair brush. A speck of dust on a negative can obliterate the image of a star millions of miles in diameter.

### Telescopes

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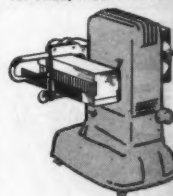
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nor dimensions. Even the giant stars, like Betelgeuse, become on a negative points no larger than the dot at the end of this sentence. Large dots indicate only overexposure.

Stellar distances, by any earthly comparison, are so vast that our eyes and cameras must record the stars as point sources of light; optically speaking, their distance is infinite and their light is parallel. To take advantage of this, astronomers use a mathematical curve called a parabola in grinding their telescope mirrors. While it resembles a spherical concave mirror, such as you might use for shaving, the paraboloid has the unique property of bringing parallel rays of light to a common focal point.

In many ways the 200-inch mirror of the Hale instrument is similar to the lenses of lesser cameras. Most of the same optical formulas apply. Thus the Hale camera's prime focal length of 55½ feet holds the same relation to image size as does the 2-inch focal length of a 35mm camera (see diagram on page 33). Likewise the Hale camera has an angle of view of approximately ½ degree as compared to the normal coverage of about 50° for average cameras. Palomar's mirror is also subject to the same limitations of resolving power; on the other hand, since the mirror reflects light rather than refracting it, astronomers are never troubled by chromatic aberration.

Although Palomar's 200-inch mirror is, of course, an ultra-telephoto lens in effect, its greatest contribution to astronomy will come from its light-gathering power, or speed. The image size at the prime focus of the Hale instrument is not much greater than that of other large astronomical cameras. An image about three-fourths as large is obtained with the 100-inch diameter Mt. Wilson mirror, which has a focal length of 500 inches. It is a small F:5, however, compared to the Hale mirror's F:3.3.

As with a lens, the F-number is calculated by dividing the focal length of the mirror by its diameter. Thus, for example, the 200-inch mirror with a focal length of 666 inches gives 666/200, or F:3.3. The same formula applies, in the democracy of mathematics, to a Box Brownie or a 6½-million dollar celestial camera-telescope.

Besides the great 200-inch mirror, the Palomar telescope is also equipped with several smaller mirrors. Like the

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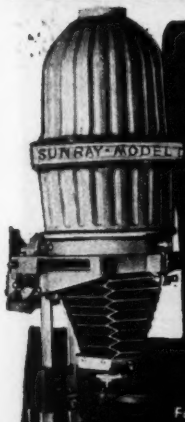
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supplementary lenses used by photographers, these auxiliary mirrors change the effective focal length of the Hale camera. As shown in the diagrams on page 32, they provide two additional foci, called the Cassegrain and the Coude, with increased focal lengths of 3,200" and 6,000" respectively. Naturally such tremendous focal lengths provide great magnification with a very selective angle of view; however, the light that reaches the foci is much too faint to be used for any but specialized purposes. The Cassegrain focus, located just beneath the great mirror, is seldom used for direct photographs, while the Coude focus, in a special constant-temperature room, is designed specifically for other types of work.

Like terrestrial photographers, astronomers, too, have accessories for their cameras—such fearful sounding instruments as bolometers, photometers, and spectrographs—which they use, during the light of the moon, at these special points of focus. Some are photographic in character, as is their most powerful attachment, the spectrograph. This photographs the spectrum of a star, and from the lines and bands appearing there, astronomers can learn the star's composition and atomic structure, sometimes even its velocity.

On the several clear nights each month when the moon is dark, Palomar's time is given to making direct star photographs at the camera's prime focus. As adept at dealing with the infinitesimally small as they are with the infinitely large, astronomers measure the tiny dots on their star plates, subject them to microscopes and microdensitometers, to unlock the secrets of the remarkable universe about us.

The Palomar instrument, which astronomers hope is the key, is still called a telescope; perhaps out of respect for Galileo and the hand-held Optik Glass with which he bravely scanned the heavens over Padua, three and a half centuries ago. But no one will scan the heavens with the Hale telescope. Its discoveries will be made not by watching the sky, but in the meticulous study of photographic plates.

Is the dot on a negative hardly distinguishable from a dust speck? If so, it may be the image of a galaxy at the outer limits of known space, so far away that it is not possible to expose long enough. Mirrors and emulsions are not yet fast enough to film it.

Pendu

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## Pendulum Patterns

Continued from page 75

fields to be explored. Our cover this month is, to our knowledge, the first published example of work of the original experimenter in this medium. Morton Goldsholl who produced this beautiful pattern used a Rolleiflex with an F:4 aperture and recorded the paths of the pendulum on Ansco Color Film. Goldsholl is a young artist and industrial designer who does freelance creative work in Chicago. He was a student of Moholy-Nagy's Institute of Design and has done considerable experimental photography. In telling of the work that lead up to his work with colored pendulum patterns he says, "To any creative worker the camera is a most productive tool. The camera is an instrument for experiment only if the operator uses it as such. The energy of the photographer too often is dissipated in putting things in front of the camera, to the neglect of what he puts behind it.

"My work with colored pendulum pattern transparencies was part of a long series of experiments to combine the phenomena of science and art. Pendulum patterns are not new, but their use in color and in multiple exposures is. They present intense graphic effects by the interplay of contrasting forms and colors.

"The technical handling of these experiments was as follows: The camera was used with type A color film. The pendulum used is the Blackburn type, which is a compound form made up of two simple pendulums hung from two different points and fastened together at some determined point, above the freely swinging end, at which point a weight, with a small light, is attached. When this weight is pulled back in an off center position, and then let go it starts a swinging motion to and fro, and describes many different intricate patterns. This is due to the opposing forces of the upper pendulums working against the lower section of the single part of this compound pendulum.

"Below this pendulum is placed the camera with the lens either in focus or out of focus depending on the effect wanted. With the shutter open during a length of time deemed necessary, long enough to record a number of swings, a pattern is formed, sometimes very compound in its form. If a more compound form is wanted, another ex-

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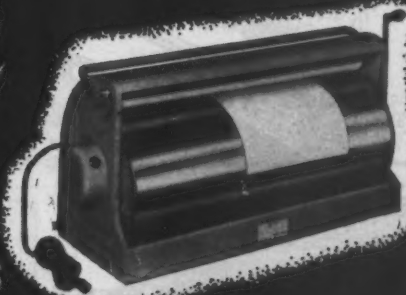


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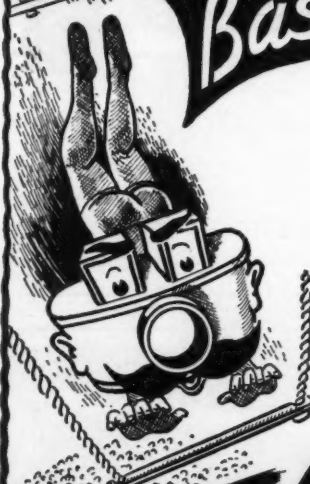
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posure is made, with start of the pendulum swing from another angle. This would amount to a sort of camera montage. All these exposures must be made, of course, in a darkroom with all the lights out, except the one on the pendulum.

"The different colored patterns were made by changing filters over the lens of the camera before each phase of pendulum swinging, or they can be changed during the swinging phase itself. This is rather a new idea in itself, this locating of the colored gelatin over the lens instead of putting it over the pendulum light where most of us would suppose it to be placed. Almost an unlimited number of designs, simple or compound, can be produced in this manner.

Pendulum pattern photographs are worth trying if you are experimentally minded. You can be sure that yours will be like no others.

## Coffee Break

*Continued from page 8*

Since her eyes were squinched and full of tears, he turned her away from the sun and managed to get her face relaxed long enough to make a flash picture. Then he investigated. Miss Miller had been sitting on an ant hill all the while.

## Kneepants and Crocodiles

We were in the middle of a deadline hurricane when a quiet, slightly rotund young fellow asked for a ten minute interview. Three hours later he was still talking—not because he hadn't



Louis Erisman

tried to leave after ten minutes, but because he had us fascinated with one of

the darned we had ev

Louis Erisman, a photographer who makes two hundred and two thousand foot rolls of film for his trips, is after from wh Africa" d mother sto carats, is lion dolla on the sce of tribesn be able to thousands turning o archives home mo well, we ing adven of Moder

## Beauty

On a rece pictures Philippe

Angeles "high su by eleva

the darndest photo-adventure stories we had ever heard.

Louis Erisman, an ex-Navy photographer who saved up enough money to make two trips into the African Zululand, is now ready for a third safari. You may have heard him on a "We, the People" program. At any rate he rides plushly about the African hinterlands in a rented DeSoto Suburban car with only a few natives and a cheetah for company. He uses Cine Special and Victor Model 5 movie cameras, shoots only 16mm color, and uses Kodachrome Commercial film in 100-foot rolls that are in no way protected against alleged "African hardships." But while color movies finance his trips, Erisman is actually looking for something of more cash value than photogenic cannibals. He is after the original mother stone from which the fabulous "Star of Africa" diamond is just a chip. The mother stone, estimated to weigh 2,200 carats, is worth approximately 3½ million dollars. Erisman thinks he is hot on the scent of it (it is in the possession of tribesmen) and he believes he will be able to barter for it. Meanwhile, the thousands of feet of color film he is turning out is filtering into museum archives as well as the collections of home movie enthusiasts. If all goes well, we'll have an article on his filming adventures for you in an early issue of *Modern*.

### Beauty on the Beach

On a recent trip to Hollywood to make pictures of a number of movie stars, Philippe Halsman ran into that Los

JOHN ZIMMERMAN



Angeles phenomenon known as the "high summer fog." Sometimes it lifts by eleven o'clock and sometimes it



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says Vasil Chakourides  
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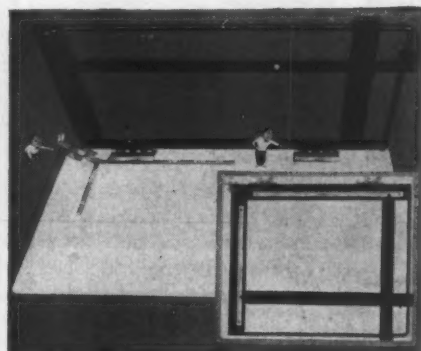
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doesn't. The star, Barbara Bates, was at Malibu Beach at the appointed time and Halsman's assistants were there too. But the fog didn't lift, and it was cool for everyone (see cut). The picture idea called for Barbara to be shown as if rising out of the sand. Half-way through the arrangements she said, "But, Mr. Halsman, this doesn't seem like a good day for making Kodachromes—I wouldn't try any today."

"Just wait and see," answered Halsman as he fastened orange cellophane over two flash reflectors. The finished Kodachrome which ran in *Life* showed the model bathed in a nice warm and sunny light. A photographer with sharp eyes, however, might notice that the sand and ocean in the background were on the blue and foggy side.

### More About the Contax "S"

A while back we mentioned a new Contax "S" camera being made in Germany, but admitted that our knowledge of it was rather sketchy. Right after we went to press, one of *Life's* correspondents, John Bryson (who wrote *Picture of a Fighter* for the September issue of *Modern*) dropped in for a chat. With him was H. G. (Hank) Walker, a *Life* photog just returned from a six months assignment in Germany and Poland.

Like most magazine photographers, Walker is partial to twin-lens reflex cameras, and to 35mm cameras. He carries two, sometimes three, Rollei-flexes in addition to a Leica and a Contax. Since Walker has experimented with the new Contax "S," we were interested to learn that he is completely unimpressed with the reflex feature.

"It defeats its own purpose," says he. "The Leica and Contax cameras are valuable to me as eye-level-focusing cameras for making quick shots on the candid side. Why use a reflex finder on them when the Rollei type cameras already in use are better suited for the job?"

While he doesn't care for the reflex innovation, Hank is pretty much sold on the new German Tewe finder for Contax and Leica cameras. He says that American correspondents in Europe are scrambling to get hold of them. It would take too much space to describe this finder here, but when you focus through it you are reminded of the Zoomar lenses used in sports photography and television. It is a universal finder for all the 35mm lenses. Very neat; be sure to examine one of them if you have the opportunity.

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## Photo Markets

Continued from page 18

judged on the basis of originality, composition and arrangement. Size of picture or make of camera used is not taken into consideration. Either black-and-white or color film may be used, but negatives or transparencies are not acceptable. Each contestant may submit only one photograph and it must have been taken with a 35mm Gruenex Telephoto or a Raydex Wide Angle Auxiliary lens. First prize—\$500, second prize—\$250, third prize—\$100. The rest of 125 prizes consist of lenses and filter kits to fit contestants' cameras. In addition, Mansfield Industries, Inc. will send each entrant one Raydex Optical Glass Filter, choice of either red, yellow, green, haze, Kodachrome blue or Type "A," also a 12-page booklet on "The Use of Filters," if entrant sends only 10c in coin or stamps to cover the cost of packing and mailing the Raydex filter. Photo entry must be sent in with printed entry form obtained from local photo dealer. Mail entry to Contest Editor, Mansfield Industries, Inc., 1227 Loyola Ave., Chicago 26, Ill.

The contest closes October 31st, 1949.

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Emil Zubryn, Calle Aureliano Rivera 4, San Angel, D. F., Mexico, operates a photo feature syndicate specializing in foreign markets and is interested in seeing professional single photos, photo stories and illustrated articles. Unusual material, human interest and the-American-scene layouts are welcomed. Glamor shots, nudes, fashions, child and animal studies, etc., considered in black and white and color; also cover subjects. Published material also acceptable if overseas rights available. Photos handled on a 50-50 syndicate basis. Self-addressed envelope and coin to cover return postage should accompany all submissions.

## Miscellany

The Aga Khan jewel theft prompts a few remarks from H. L. Bloom, vice-president of Lumbermens Mutual Casualty about a new source of income for photographers. Stolen valuables, he says, stand a greater chance of being recovered if the owner has identifying photographs of them, for while complicated written descriptions are fine for experts, they're little help to anyone else.



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## books about photography

### *The History of Photography from 1839 to the Present Day*

By Beaumont Newhall

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They tell the story, in Russia, of a young fellow who discovered the principle of the bicycle in 1930. Working diligently in the seclusion of his village of Sevastopol, he spanned two wheels with a seat to make a coaster, and then added a chain drive between the wheels. By 1940 he refined the contraption so that it worked beautifully, and rode it the 1,000 miles to Moscow to show to the Trades Council. Bicycling down the streets of Moscow, he was amazed to see a thousand bicycles like his, only better.

Stalin is supposed to tell this little story to show the value of education; history tells us that Caesar told the same story about the chariot. The story is worth its long life and many adaptations.

Photography is only a hundred years old, and to learn its history is an easy matter, compared to the history of art, or worse yet, alchemy. Because photography is so new, there are not many history books written about it, and several of these are dull. A man desiring to learn the photographic past finds few places where he may go to study, let alone books he may read. This is one of the reasons why photographers repeat and repeat what has been done before. Like the Russian from Sevastopol, they are re-discovering, twenty years too late, that what they are doing does not carry photography forward, but merely imitates a section of its past.

In his new book, *The History of Photography from 1839 to the Present Day*, Beaumont Newhall offers our photographic cultural heritage to a serious young photographer who wants a start in the right direction. Here lies his past. The wayward path of photography is traced, with excellent illustrations, from Daguerre's picture of his workshop made in 1837, through Talbot, Hill, Nadar, Brady, Robinson, Rejlander, Cameron, Jackson, Muybridge, Emerson, Stieglitz, Steichen, White, Atget, Strand, Man Ray, Weston, Adams, Brassai, Hine, Evans, Lange, Abbott, Webb, Cartier-Bres-

son, Riis, Rothstein, Levitt, Moholy-Nagy, Edgerton, Weegee, Platinick, Smith, Beaton, Newman, and Lynnes to mention some of the more notable names whose pictures are shown.

Present day salon photography as it is known in this country, under the guidance of the P.S.A. is not covered, possibly because Mr. Newhall does not feel it makes a contribution. The well-known names of B. Vincent Abbott, K. V. Arntzen, Grace M. Ballantine, Eleanor P. Custis, Mrs. Jean Elwell, Dr. J. O. Fitzgerald, Frank E. Fuller, Mrs. Mildred Hatry, and Jack Wright, whose work has recently been hung in fifty or more salons throughout the world, do not appear in this book. Since these men and women are undeniably a part of photography, and since they influence thousands of members of camera clubs, Mr. Newhall should have included samples of their work, or explained his omission. Our best known modern critics who, in the East, include such men as Wilson Hicks, Alexey Brodovitch and M. F. Agha, who have influenced the public through their students, and through their choice of photographs for *Life*, *Harper's Bazaar* and *Vogue*, are also not mentioned.

Anyone discussing a history book covering 100 years can think of things it missed. The information the book does contain is certainly worth five dollars. The birth of action photography, photograms, abstracts, as well as the pin point clarity of the F:64 group is explained along with many fine illustrations. Modern trends in photography are more easily grasped by sensing how they originated, as explained by Mr. Newhall.

One of the remarkable photographs in the book is a double page spread, made around 1843, showing William Henry Fox-Talbot at work with eight men in a back yard, printing in the sun. They have just made a photograph of a statue, also shown. The emphasis of the book is, fortunately, not on technical processes or biography. It is really an account of where modern photography came from. No attempt is made to prove that Americans are better photographers than anyone else; Mr. Newhall has no prejudices on national-

ity or race. Photography's purest joy is the sheer joy of image to our search for truth. Every photograph is a book, for it has a better good book than you know it.

Mr. Newhall, a historian, has been trying to tell a story that has been riddled with mistakes. His mistakes are his mistakes. *Photography Day* is a sad time, our first and not our last. We'll all be better off.

Mr. Newhall never allowed his body, a simple body, to be His choice of but his explanation as to e Perhaps if

## Modern

All of the Modern books of

- The History of Photography** by Beaumont Newhall. Reviewed in *Life*. 256p., fully illustrated. \$5.00.
- This is Photography** by P. & W. Wynne. Not a photographic book. 260p., prof. illus. \$4.95.
- Film For Dummies** by 12 meaty rector on making. 279p., 101 illus. \$4.95.
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ity or race. He traces how photography's purpose expanded from the sheer joy of making a permanent image to our modern day attempts to search for truth as seen through pictures. Every camera owner is a better photographer for having read this book, for the same reason that you have a better chance of enjoying a good book and even of writing one, if you know literature.

Mr. Newhall's life as a curator and historian has been brimful of phonies trying to take him for a ride. He has been riddled by his share of in and out of focus frauds, but he never gets around to a refreshing confessional of his mistakes and how he learned to improve his judgment. "The History of Photography from 1839 to the Present Day" is a safe and sane history. If, next time, our friend will let his hair down and not balance himself so adroitly, we'll all be the gainers.

Mr. Newhall, for better or worse, never allows himself to be mad at anybody, a singular attribute for a critic. His choice of photographs is excellent, but his explanations of *why* are so delicate as to etiolate his own convictions. Perhaps if a man is curator long

enough, he gets that way, or he isn't a curator. This is a handy position for an historian to take, but not of too much help to the student who feels that with all of Mr. Newhall's knowledge and judgment, he should articulate his own critical position in one forceful chapter. From this a photographer might well learn to see better into himself and understand where he is imitating instead of creating.

But as it stands, the book is well worth owning and reading. Now a photographer may lay his hands on one book that is easy to read, easy to look at, and become acquainted with 90% of all that has gone before him that is worth knowing. The next step for the photographer is to go to his library and seek out other examples of the photographs of the men whose work appears in this book.

It is so terribly important that photographers have a place to go where they may see the collected great works of several hundred photographs, past and present.

Nobody has gotten around to telling our sensitive, younger documentary photographers (whose names we cravenly will not mention) that it isn't

enough to have something to say (like, "here is a stinking old shack where people live, *shame!*") and to say it honestly (you can see the cracks under the cold, hard, flat, realistic lighting); but *also* you have to show a little originality.

Stieglitz's photograph of steerage passengers in 1900 and his horse-car-on-a-frosty-morning picture were of tremendous importance in their day. Today they are of historical importance only. In 1900, interest centered on the fact that a profound student and a real artist turned his camera on common nouns instead of an idealized baby with blue eyes and curly hair; elsewhere thought to be the ideal subject for *any* photographer. England's Royal Photographic Society took issue with Stieglitz and the battle was joined; sweet corn and delightful nostalgia vs. we, the people.

Although Mr. Stieglitz and the governors of the R.P.S. in 1900 are all dead, their heirs continue the dissension. Mr. Newhall's book, while avoiding much discussion of this struggle, does show through photographs, how we came to be where we are today in our appreciation of picture values.

## Modern PHOTOGRAPHY'S Book Department

All of the books listed here are recommended by the Editors of Modern Photography for their information and entertainment value.

### books of general interest

- 1 **The History of Photography** by Beaumont Newhall.  
Reviewed this issue.  
250p., fully illus. \$5.00
- 2 **This is Photography** by Thomas H. Miller & Wyatt Brummit.  
Not a primer, but a sound introduction to photography in its many phases.  
260p., profusely illus. \$2.00
- 3 **Film Form** by Sergei Eisenstein.  
12 meaty essays by the famous Russian director on the theory and practice of film making.  
279p., 10 illus. \$4.50

### books on "how-to-do-it"

- 4 **"Strobe" — the Lively Light** by Howard Luray.  
The "why and how" of electronic flash, written in an easy-to-understand manner.  
128p., 79 diag. and illus. \$4.00
- 5 **Graphic Graflex Photography** ed. by Willard D. Morgan and Henry M. Lester.  
A symposium on basic photographic practice, general and specialized, written by 32 experts.  
8th ed., 456 p., 650 illus. \$4.50
- 6 **Fred Archer on Portraiture** by Fred Archer.  
One of the outstanding books on portraiture technique, with specific instructions on posing, lighting, make-up, and camera work.  
224p., 212 photos, 70 diag. \$5.75
- 7 **Kodachrome and Ektachrome** by Fred Bond.  
The latest edition of this outstanding book on color photography.  
3rd ed., 244p., beautifully illus. \$7.50

- 8 **Westward How** by Fred Bond.  
Maps, schedules, and a pertinent information for a camera tour West.  
324p., 130 illus., many in color. \$6.95
- 9 **All the Photo Tricks** by Edwin Smith.  
A comprehensive guide to photography's special effects: double exposure, montage, distortion, etc.  
3rd ed., 279p., well illus. \$3.00
- 10 **Handbook of Photography** ed. by Keith Henney and Beverly Dudley.  
A mine of advanced technical information on the scientific basis underlying photography and its specialized applications.  
871p., many illus. \$8.50

### books for reference

- 11 **Photo Lab Index** by Henry M. Lester.  
The standard photographic reference book giving concise technical information on every phase of photography and photo materials of all manufacturers. Quarterly supplements available at \$3.00 per year.  
10th ed., 1200p., approx. many charts, in deluxe 6-prong loose-leaf binder \$16.00
- 12 **The Photographic Process** by Julian Mack & Miles Martin.  
A comprehensive, clearly-written textbook on photographic theory and practice.  
575p., thoroughly illus. \$6.00

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## last word letters to the editor

### Not Nuts — Photographers

Sirs:

This is such an unusual view of a familiar subject that I thought it might interest *Modern* readers. This picture was shot (with a Speed Graphic) from a helicopter hovering so close to the "Lady" that we were practically under



her armpit. The sightseers in the crown of the statue were fascinated; they thought we were nuts.

Brooklyn, N. Y.

SIDNEY ROSS

### Why A Rolleiflex?

Sirs:

Joe Munroe's lavish praise of the Rolleiflex in the Sept. issue does not set so well with those of us who use the Ikoflex III. Many a time I have made a sequence of 12 exposures in eight seconds with my Ikoflex. The fast F:2.8 Tessar lens on the Ikoflex, and its Albada sportsfinder for eye-level work, are in themselves sufficient reasons for choosing the Ikoflex over the Rolleiflex.

New York

JOHN BURKHART

Sirs:

That was a grand article about the Rolleiflex, but how about a kind word for the Rolleicord, the poor relation of the family? Many amateurs who can't shell out \$307.50 can take remarkable pictures with the cheaper Rolleicord.

The Rolleicord has a pretty fair au-

tomatic film transport (although it won't prevent double exposures). The Triotar lens delivers just about as effectively as the Tessar (at least up to 11 x 14), the controls are easy to see and to operate, the camera functions beautifully with a Heiland tripper and the price is very low.

Utica, N. Y.

VINCENT JONES

UTICA OPERATOR-DISPATCH

Sirs:

*How To Use The Rolleiflex* was the best article of its sort I ever read. But why do photo magazines keep thumping the drums for twin-lens reflex cameras? I use a Kodak Medalist. Can you give me one good reason why I should change to a Rollei?

Hastings, Neb.

CHRIS BILLINGS

• *Nope, and for heaven sakes don't change to all the other cameras we will cover in these definitive articles, Chris. We are going to "thump the drums" on a lot of them just as honestly and completely as we know how. Our idea isn't to sell you on any camera; it's to help you decide for yourself which camera you need or want.—Ed.*

### They Do Close Their Eyes

Sirs:

After reading "Of Cattle And Co-Eds" in the *Coffee Break* editorial column of the first issue, I couldn't resist sending in this snapshot of my daughter and her husband with their



dog, Bonnie. Here is more proof that men do close their eyes when being kissed, even in front of friend wife.

Des Moines (MRS.) WARREN BACON

## He Knew Croner

Sirs:

What pleased me most about the September issue of *Modern* was the article about an old buddy of mine, Ted Croner. We attended the Air Force Photo School in Denver together and upon graduation were assigned to the 5th Photo Lab Section at Thermal Army Air Field, Calif.

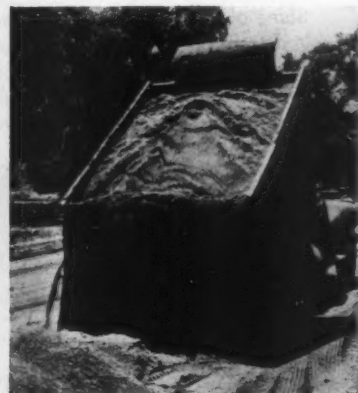
Even in those days Ted was experimenting with light and looking for different ways to photograph his subjects. Character studies were his favorites. Ted didn't get a fair shake in the outfit because the top non-coms disagreed with his wide variety of ideas. I sincerely hope those same top non-coms have read about the success Ted so justly deserves.

Boston, Mass.

THOMAS BENSON

Sirs:

After reading the article about Ted Croner I decided to send you this picture made on the same principle of not



freezing motion as his. I took it on purpose this way to blur the sand.

Ashland, Kan.

ALBERT POWERS

Sirs:

I found the Ted Croner article utterly valueless. I read it because I thought that somewhere in it I would find justification for its stumbling length and inexcusable pictures. I did not find this; I am bewildered.

Elgin, Ill.

JACK ASHMAN

Sirs:

I care nothing about the details of Ted Croner's life, but I found his work most interesting. Frequently it is embarrassing to read *Modern* because it makes me stop and think of the pictures I have missed. That is the way I want it to be; I hope it continues.

Cambridge, Mass.

D. H. WRIGHT

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## The Traveling Darkroom

Sirs:

In "Shooting Straight" (Sept. issue—Ed.) you have a picture of a traveling darkroom with a caption stating that "This was the first traveling darkroom." The date given is 1868. In the book *Mr. Lincoln's Cameraman*, however, it is stated that in 1862 Matthew Brady bought several wagons, equipped them as traveling darkrooms, and had them in use throughout the war.

Middletown, Conn. R. L. FERREE

\* Thanks to Mr. Ferree and all other readers who called our attention to this erroneous caption. Brady did, indeed, have an earlier traveling darkroom. Several readers also mentioned a "perambulator" darkroom that Daguerre is supposed to have used. Like them, however, we have never located an actual reference to this traveling darkroom in documents of the times.—Ed.

## Sitting Pretty

Sirs:

Some of my best pictures have resulted from taking one candid picture of a subject (usually from the side or in back) before I was "discovered", and another picture after the subject



became aware of me. "Sitting Pretty" is the candid shot that amuses my friends the most. It was made with a Miniature Speed Graphic one hot afternoon in August. The sun bather didn't even know his picture had been snapped.

Tulsa, Okla. TONI ENSLEY

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# Greeting Cards



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For example, you'll need plenty of good photographic paper. For contact printing, Kodak Azo Paper, of course; and for projection, Kodabromide Paper. For greetings designed to be folded, Kodak Ad-Type Paper is the answer. Kodak papers have the quality, the uniformity, the beauty you require for your greetings. And they're available in an ample variety of sizes, weights, and textures.

Maybe, this year, you've decided to use a Kodak Christmas Greeting Card Mask. Certainly, it's the easiest way to a good greeting. Slip one of your own good, appropriate negatives into position in such a mask, and you're all set to contact-print your greetings by the dozen—or by the hundred, if your list is that long. Ask your dealer to show you the Kodak Christmas Greeting Masks No. 27. You'll find them beautifully adaptable to your negatives and needs. Priced at \$1 for the miniature masks (projection printed) or at \$1.25, including Federal Tax, for standard-size masks.

Add Christmas color to your greetings with a Kodak

Edge-tinting Outfit. Simplest thing you ever saw—and very effective. A red or green edge dresses up a greeting card beautifully. The Outfit, complete with quick-drying red and green inks, four felt nibs, and a nib holder, is priced at \$1.50.

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Whether your greeting for Christmas '49 is a simple snap mounted on a card, an elaborate, multiple-negative job, or something in between, you'll enjoy producing it. Your friends will appreciate it, too. For there's something special about a photographic greeting.

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